

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: mizrahi@svlhp8.scs.philips.com  
Subject: [8755] 40-9er offset - diodes (cont.)  
Message-ID: <9605210049.AA12180@svln20.scs.philips.com>

I measured a few 1N4001 and 1N4002 from the SAME BATCH and the same (unknown) manufacturer and they showed a wide spread of capacitances. Given this, the use of the standard rectifiers cannot be recommended without a caution, that you have to verify their capacitance values to be close to mine (see prior posting). However, I found Motorola 1N4006 to have much lower spread than the 1N4002 that I used and they'll make a good replacement for D3.

The following guidelines can be used in general:  
if your highest frequency is too low (7039 or less) then you must get a lower-capacitance D3;  
if your lowest frequency is too high (7039 or more) then you must substitute higher capacitance diodes for D1/D2 or add a 10-22 pF in parallel with D1/D2, you'll have to experiment to find the best value for your circuit.

I'll be checking "real" varactor diodes to replace the rectifiers and yield more predictable results.

The candidates right now are MV2101, MV1620/1N5441, 1N5140/A, MMBV105GLT1 and MMBV809LT1 to replace the 1N4002 (D3) and a SINGLE diode from the following MVAM108, MVAM109 and MVAM115 to replace the TWO diodes D1 and D2. We'll experiment with the above and report the results.

ORI

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: mizrahi@svlhp8.scs.philips.com  
Subject: [8734] 40-9er offset circuit - diodes  
Message-ID: <9605201929.AA26923@svln20.scs.philips.com>

If you have tried the offset circuit posted on Friday, using 1N4001 and 1N4002 diodes as varicaps, I would appreciate your inputs. The circuit was duplicated by Alan Kaul with parts he purchased on his own (i.e. not related to the ones I have) and a 78L06 in the circuit. He's getting 2 KHz of receive range and a similar offset range to mine. I received one message that indicated a different range, but we haven't reviewed all the details. It is possible that diodes from different manufacturers have a different capacitance characteristics.

I measured capacitances as follows (in pF - plus minus):

	0V	2V	6V	7.8V	<--- reverse bias
1N4001	62	27	16	14	
1N4002	18	8	4.2	3.5	

The easiest to measure is, of course, the 0V bias point, and you should see much higher capacitance rating for the 1N4001 vs. the 1N4002. I found a 1N2071 and a 1N4005 to be reasonable replacements for 1N4002, from the ones I've measured.

73 DE ORI AC6AN

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: "Bill Kelsey - N8ET - Kanga US" <kanga@bright.net>  
Subject: [8760] Another New Rig (Kit) at Dayton  
Message-ID: <199605210307.XAA22014@brutus.bright.net>

I guess Doug, Chuck, and all the others were too busy looking for Altoids boxes to notice that there was a full sized 10 band SSB/CW rig with DDS VFO and microprocessor controller being demo'd at the QRP suite at Dayton. It was the Hands RTX 210 kit. Next year I will turn the volume all the way up on the 12" speaker it was connected to.... It will do 5 watts on either TX or RX - HI!

Drop me a note if you would like more info.....

73

73 - Bill Kelsey - N8ET  
Kanga US  
kanga@bright.net  
419-423-4604  
<http://qrp.cc.nd.edu/kanga/>

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: "N100Q Tom R. @ MR01 20-May-1996 0936" <randolph@est.ENET.dec.com>  
Subject: [8714] Argo 505 again...  
Message-ID: <9605201348.AA09205@us4rmc.pko.dec.com>

Well, I'm now the proud owner of dead Argonaut 505 S/N 1094. I poked around a little last night. A little hissing and clunking can be

heard in the speaker when switching the mode selector around. Other than that, nada.

Playing around inside, I found that the voltages on the pins of the audio amp transistors are all way off, so something funny there. Going back one stage, the IF board checked out OK. Time permitting tonight, I'll drag the scope out and make sure all the signals look good up to the audio board. Oh, the sidetone osc. works, but nothing is heard in the speaker. After the base of the 1st audio amp, nothing (sounds like a hint, eh?) There's a complete alignment procedure in the manual, so it'll get that done to it once it's working and the dial cord is replaced. Cute radio, I think I like it!

-Tom R. N100Q randolph@est.enet.dec.com

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: NYOUNG@nova.wright.edu  
Subject: [8716] Bicycle mobile amp/ps stuff from the banquet +c  
Message-ID: <01I4XAWH5ZG68X5FNK@nova.wright.edu>

What with a memory like a brass bed pan, I can't remember what kind (and demented) soul shared with us banquet chewers the story of his bicycle mobile station. I'd like to know so that I can find out what kind of switching power convertor he used to get 28 V for his "lean-year" amplifier.

I ask this question only because the staff here has agreed to let me build another radio. And since the radio is built to run on 28 V ('cause the output power FET demands such voltage), I need to know how to make a DC-DC juice enhancer. One for the car (when I get to actually drive off the grounds) and one for the shackula (which is another story entirely).

By the way, Chuck is incorrect about my being able to name all the countries on the DXCC list. I only know a few of 'em. The ones that I have QSLs for, actually.

It's the t-shirt, actually, you see. I had made up a couple t-shirts with a slogan and flag deal on the front. I was wearing one Saturday when I got the level-one sunburn. Another one got worn to the Saturday suite deal, when I came dressed as one of those cheap drug lords you see now and then: white jacket, slogan-bearing t-shirt, off-white slacks, dress pointy-toed sloth boots.

The t-shirt was kinda interesting. On Saturday morning, while wandering in the market of economic fleas, I stopped at a table

and looked at the stuff. The guy behind the table said hello and then, in a version of English only heard on the VOA's "the...news...in...special...English" programming said "Where... are... you... from?"

I looked up and said "About 18 miles frm here." Then the table guy said "Oh... But... what... country... are... you... from?" To which I responded, in Medway-Clark County dialect "From up th' ro-oad abou-out fiyif-teeyeen mi-yulz... iyin Mayadwayee."

I don't think he caught the accent right away, 'cause he then said "Ok... but...what... is...that...flag...on...your...shirt?" So I looked at him and said "A"za"t S,a"rqiy Tu"rkistan.... East Turkistan."

Now the flag is a sky-blue colored version of the Turkish flag. White crescent and star on a blue field. The guy behind the table looks real hard at the shirt and says "Ok. But why are you wearing that flag? Isn't that some arabic symbol or something?"

You'd have thought that I was a member of Hezbollah or something. I should have printed up a bunch of QSL cards just for the event. Weird. Almost as weird as the time I ran into some Canadian guys in fleaspace wearing matching t-shirts that said "Save the bales!"

You shoulda been there.

73

Nils

WB8IJN +c

(Aren't you glad that I got my modem fixed? Huh? Aren'tcha?)

From owner-qrp-l@Lehigh.EDU Mon May 20 22:33:40 1996

From: burdick@interval.com (Wayne Burdick)

Subject: [8746] Can anyone tell me the Dayton price on the IC706?

Message-ID: <v02130507adc6a6147389@[199.170.106.28]>

...and where you could still get that price on one?

Thanks,

Wayne

N6KR

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: Dick Schneider <74602.3317@CompuServe.COM>  
Subject: [8751] cancel cancellation fer WTB Mizuhu 10m  
Message-ID: <960521000103\_74602.3317\_EHH146-3@CompuServe.COM>

Cancel the cancellation for Jim Leininger. He's got 3 more people looking for Mizuhu 10m HTs. Here's the original post:

WANTED TO BUY:

MIZUHU 10 Meter CW/SSB HT

Contact Jim Leininger at Jleininglanet.net -or- 74364.207@compuserve.com

Or you can email me at 74602.3317@compuserve.com and Ill relay the note.

Tnx es 72/73 Dick/KB0SRY..

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: Dick Schneider <74602.3317@CompuServe.COM>  
Subject: [8727] Cancel WTB: Mizuhu 10m HT  
Message-ID: <960520180546\_74602.3317\_EHH46-2@CompuServe.COM>

Jim Leininger has found a 10m Mizuhu HT, so the previous WTB message I posted on his behalf is hereby cancelled.

72/73 Dick/KB0SRY..

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: KR4GL@aol.com  
Subject: [8732] Contesting on 30 Meters  
Message-ID: <960520151824\_494828513@emout13.mail.aol.com>

Guys, while at Dayton I picked up two of CQ Publications' mags at \$1.00 a shot. Not a bad price, and gave me some reading material on the way home.

Am I glad I did, because now we're all set. In an article called "Build Your Own 30 Meter Transceiver" (page 11, June 1996 CQ) appears the following:

"As the solar cycle enters its minimum, many HF bands become limited to a few

daylight hours for most contacts. Even 20 meters starts to close down at about sunset, and this makes the band congested during the day. On the other hand, 30 meters is open most of the time, day and night, even when the solar cycle is at its lowest. The 30 meter band has the advantage of low D-layer absorption. Daylight DX on 30 meters is about 3K meters, and at night signals skip into Europe off the F-layer.

"Because 30 meters has a low power restriction, it is a popular QRP band. You will often hear G-QRP Club (UK radio amateurs) signal[s] around 10.106 MHz, and there are usually a few central Europe stations lurking nearby. The ARRL and CQ international DX contests feature separate categories and "multipliers" for QRP operation. It's on 30 where many of these stations make their big scores."

So there you have it. After all, at the bottom of the page it says "Say You Saw It in CQ."

72 de KR4GL  
John Foote

From owner-qrp-l@Lehigh.EDU Mon May 20 22:33:40 1996  
From: bfollett@ditell.com  
Subject: [8758] Days Inn South  
Message-ID: <199605210237.UAA27551@orion.ditell.com>

Gang:

Dave Meacham wrote:

<<Re Days Inn South: It is a crummy motel.

- 1) The whole place smells of mildew.
- 2) Many of the room air conditioners don't work.
- 3) There is no breakfast served on Sunday.

>>

No exaggeration!!

Somehow, I kept thinking of Legionnaire's disease each time I made my way down the hallways. What did you think Dr. Rick?

When I left on Sunday, my room which faced the morning sun, was up to 87 degrees with the air conditioner on full!

Now I guess I could accept all of this if Days Inn charged us their advertised room rates of \$40-42 dollars, plastered on billboards all over town, but with

the Hamfest price gouging rate of \$70 "for us special people", one would think we could do better.

Perhaps someone from ARCI has researched this in the past, and found the whole town sticking it to us, I would be interested in comments. Maybe all the good hotels have been spoken for long ago by longer established groups, maybe those hotels could be outbid by us. It seems like ARCI should put a tickler in their collective calendars to examine other options about the time Dayton starts booking for the Hamvention in early October....

73, Bob

-----  
Bob Follett WA7FCU, QRP-L # 129, NorCal, ARCI, 10-10  
2861 Estates Dr. VOICE: 801.649.6457  
Park City, UT 84060 Home Office E-mail: bfollett.ditell.com

From owner-qrp-l@Lehigh.EDU Mon May 20 22:33:40 1996  
From: "evans ken" <evans.ken@wgs-2.bwi.bls.com>  
Subject: [8742] Days Inn South - A satisfied user  
Message-ID: <n1379511321.85825@wgs-2.bwi.bls.com>

I've read the comments on the QRP Hotel, and thought I'd through in my comments. We did have trouble the first night with a very warm room. We complained to the front desk and they told us to turn the thermostat up to approximatel 68 to 70 degrees (we had it turned all the way down to 55 trying to cool the room). We did it and the room stayed at 68 degrees the rest of the time. I do agree that the hotel has a good bit of wear on it and the restaurant leaves a great deal to be desired, however, all was adequate for our group. The rooms ended up being comfortable after we complained about the temperature, we ate at close by (across the street) restaurants and were only 25 minutes from the Hamfest.

Since the sleeping accomadations ended up being comfortable, we can live with the aged environment and accept it as a trade off for the conference rooms and the ability to put up antennas. Also, many facilities would not have permitted the pizza that was brought in or the drinks.

I understand that we used about 80 rooms this year, with the draw that is Dayton, it will probably be difficult to find another facility that would accomodate a group that size.

We're looking forard to next year.

72/3  
Ken Evans KJ4XR

North Georgia QRP Group  
evans.ken@bwi.bls.com

From owner-qrp-l@Lehigh.EDU Mon May 20 22:33:40 1996  
From: bfollett@ditell.com  
Subject: [8722] Dayton & Nils  
Message-ID: <199605201615.KAA13767@orion.ditell.com>

Gang:

Randy WJ4P wrote:  
<<BTW, Nils looks \*fairly\* normal "in person" ...>>

Yah, certainly not the way I had him pictured in MY mind.

(Hang in there Nils, but you are going to have to make a trip to the Left Coast to operate near Area 51 to get this alien thing desensitized out of your brain)

73, Bob

-----  
Bob Follett WA7FCU, QRP-L # 129, NorCal, ARCI, 10-10  
2861 Estates Dr. VOICE: 801.649.6457  
Park City, UT 84060 Home Office E-mail: bfollett.ditell.com

From owner-qrp-l@Lehigh.EDU Mon May 20 22:33:40 1996  
From: PDouglas12@aol.com  
Subject: [8741] Dayton -- how much does it cost? (too long, sorry)  
Message-ID: <960520161055\_494930356@emout19.mail.aol.com>

I thought it would be instructive to figure out what it costs to come to the Dayton Hamfest if you don't live in Ohio. Obviously it is trivial if you can drive in for the day.

So, figuring that airfares across that US run around the \$250 mark if you find a decent fare, roundtrip, here's what it will cost you. But wait.

Before I scare you off, the purpose of this is not to overwhelm you with costs. It is to show you how to put it together.

First airfare This ran me \$264 round trip from Lagueardia Airport, NYC. My advice is to watch the fares year round and jump on the newspaper ads for the cheap fares. (No jokes about ValueJet, please.) Then, tell your family to forget the pajamas for Christmas/Chanaka. You want plane tix. Betcha' they



spend a significant portion of the price of those tickets on ties (you won't wear), shirts (you won't wear) and other assorted stuff you would never buy yourself, even if you were a millionaire. There's father's day (or mother's day--I no sexist), and your birthday too. That's your present.

Now, you need to save up yourself for the rest:

Four Days in May Fees.....	\$
30.	
Banquet	
.....	
15 (approx; I forget--getting old)	
Hamvention Admission.....	
12 (advance sale)	
1/2 Hotel	
.....	
...163	
1/2 Car	
Rental.....	
... 65 *	
1/2 Parking or	
transportation.....	10 (est.
see below)	
Meals	
.....	
.....100	
Total incl	
airfare:.....	
\$659.00	

Remember, you got the air already paid by judicious hints and demands. So, you need to come up with another \$395 to make it there. Now, you can stay in the KOA campgrounds and save some off the \$70/day rate for the room, but at 35/day with a roommate, I just don't think it pays. The Days Inn has seen better days, but it is reasonably clean (ask for non-smoking unless you smoke, in which latter case, you'll never notice the mildew) . And at 25/day for the car (shared that's \$12/day for wheels--and it'll hold four if you have a bigger party. So, with four you pay a paltry \$6/day for transportation and freedom.)

And we never ate in the hotel, except for the banquet. The whole Days Inn South area is lousy with good, cheap restaurants--One night we went out "expensive" (on the "what the heck" theory) and a big red aged steak was about \$25 with the trimmings and tip. (No, I won't tell you where; it is crowded enough already!)

So, you can eat cheaply and save off my figure above at least \$25. Oh, on the other hand, with the car you definitely don't have to eat the stadium food at the Arena. Hint: Stop at the big Krogers supermarket on Rte 70

(that's the road into Hara from the interstate (75). They will set you up with great fresh deli stuff, fresh bread, yogurt and even low fat cheese to help your big belly. I figure if you have four people in a car you stand to actually save money by buying your lunch at the Supermarket and finding places that are cheaper and better for breakfast and dinner outside the hotel.

The banquet is a bargain--the food is pretty good, the company and talks were great this year, and you might win something (I did. Got another year of Norcal membership!)

So, now we come to spending money. I figure you need a couple hundred, absolute mininum, above the living costs above. I bring about \$500, but I spend some of that on meals. Some guys bring a thou or two (maybe they don't have tuition bills to pay.) There are cash machines anyway, so I don't see the point in bringing more, unless you are planning to buy parts in quantity for a company or club. Bring your checkbook for renewals and kits (many of your fellow QRPers will take your check--trusting sorts, they are.) and bring your Visa card for major purchases if you plan to do any serious buying of commercial stuff.

Anyway, that's the cost part. I'll do a personal version of why it's worth the cost in the next post. But here's the bottom line: The QRO guys are fond of saying life's too short for QRP. We know that's crap. But it is too short to miss the Hamvention. I have no doubt there's a section of heaven for us dweebs--with a hamvention in it.

Preston WJ2V

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: Doug Hendricks <ki6ds@telis.org>  
Subject: [8748] Dayton 96 (Very Long)  
Message-ID: <31A0FC43.32A5@telis.org>

This is a multi-part message in MIME format.

-----14D95023E1D  
Content-Type: text/plain; charset=us-ascii  
Content-Transfer-Encoding: 7bit

Here is my report written on very little sleep. What wonderful time. It was like Christmas in May. This is quite long, but that is why you have a delete key. Enjoy.

-----14D95023E1D  
Content-Type: text/plain; charset=us-ascii  
Content-Transfer-Encoding: 7bit

Content-Disposition: inline; filename="Dayton96"

This year marks my fourth trip to Dayton in a row, and it was just as exciting as ever, if not more so. I left right after school on Wednesday, drove to San Jose where I met Bruce Florip, AA7AR and his new wife, Hae Joeng. We went out for dinner and then Bruce and Hae Joeng took me to the airport to catch the plane, as they just live a couple of minutes away. (Saves the long term parking fees.)

I flew to Chicago where we barely were able to land due to the fog, and then had a 2 hour delay in my connecting flight. But we were lucky in that we were able to take off and get to Dayton. I talked to many at the hospitality suite who had to rent cars and drive all night just to make it.

Bill Jones, AC7S, was waiting at the airport. We had never met, but he sent email that he needed a ride to the hotel and that it was his first time at Dayton. The hotel where the QRPers hang out is the Days Inn Dayton South which is about 25 miles from the airport and a \$30 cab fare. I was anxious for the company, and glad to give Bill a ride to the hotel. On the way, he showed me his 49er building contest entry, and it was beautiful. We missed the turn and headed the wrong way. Finally, we realized it, Bill got out the map, and navigated us to the hotel. (I thought I was showing him the way!!!) It was a good thing that one of us knows how to read a map.

We arrived at the hotel and checked in, deposited our bags, and went to find the "Four Days In May" symposium group. They had just finished lunch, but they saved ours and we got to eat and listen to Dr. Rick Zabroski VE6GK, from Calgary give a very entertaining talk on the effects of RF on the body. Dr. Rick also showed us slides of his glider and all the equipment that he has bought to build these simple kits.

I then realized that I was exhausted, as I was unable to sleep on the plane and had been up all night. So I slipped away and took a shower with the intention of taking a nap afterwards. But the adrenalin was running too high, and I couldn't resist seeing my friends. I talked with Paul Harden NA5N and Rich High of the Colorado QRP Club who had made the arrangements for the open house that night featuring Paul as speaker and the signing of Paul's new book. Every thing was ready to go, and we decided to go out to dinner with a group at Bob Evan's Restaurant. Chuck Adams, K5FO, Ralph Irons, AA6UL, Hugh Matheson K6QD, Dan Puckett, Rich High, Paul Harden and I all had a great meal and super conversation.

The talk of the table was the great time that everyone had at the FDIM symposium. They all agreed that they were looking forward to next year and another round of forums.

Thursday night featured the Colorado and NorCal QRP Club's Open House with Paul Harden. The room was packed and Paul did a great job comparing the designs of the various rigs. Then we went to the hospitality room for the first ever vendors night. Each vendor gave a brief description of their products and we then started to mill around renewing old acquaintances and meeting new friends.

I saw the new Atomic Keyer 1 by Brad Mitchell and Gary Diana. It is a memory keyer that is PIC based, and small. It fits in an Altoids can (what

else) and has programmable memories. The best part is the price. \$30. I bought 2, one for Jim Cates who could not make the trip, and one for me. Then Dave Benson, NN1G of Small Wonder Labs showed me his White Mountain. This is a SSB transceiver that he has on 20 Meters now, but will have on 75 Meters soon. (I ordered the 75M version, the board kit was only \$100, the kit with the case and the PIC based frequency counter (audio output like the KC-1) is \$160. I also bought a Green Mountain 30 (actually 2) for myself and Bruce Florip (had to take him something for all of his efforts in getting me to and from the airport.)

Dick Sysmanzki, KA3ZOW from S & S Engineering was showing his new product, a DDS VFO. It is an excellent kit and should generate a lot of projects.

I showed the prototype of the Altoids 40, which is the fall kit project for NorCal. It will be a 40 meter transceiver, with variable band pass tuning, 2 Watts out, (variable from 0 - 2W), audio preamp (drives a speaker easily), RF Gain, AF Gain, VXO tuning of 7-10 kHz, and a Curtis Keyer on board. It all fits in an Altoids can and has on board connectors, so there is no wiring. The boards will be double sided, plated through, solder masked and silkscreened. November is the target date for introduction. The best part is the price (somewhere in the \$40 - \$50 range).

Lots of interest, several commented that it looked like a 49er on steroids. The board is very dense. Bruce Florip, AA7AR and I are working on the design together. He is the engineer, I am doing the cad work on schematics and board layout.

Soon it is midnight, and then I see it. There is a very nice Argo 509, with a cw filter, and a MICROPHONE, a real honest to goodness TenTec mike. Wow!! I have never seen one for sale before. This one is in excellent condition too. I walk over, ask, "How much for the mike?"

"Sorry, it is part of an estate sale and all goes together."

"Oh, well, how much for the whole thing?"

"\$300"

That is a fair price, but not a great one. So, I counter with, "\$200".

Scott, who is handling the sale for the widow, looks at me and says, "Come on Doug, this is an estate, think of the widow." For you rookies, it is a common ploy, and a good one, to mention the "widow" often during negotiations for estate goodies. "But, I would take \$250."

Ahh, it has started, my favorite activity, negotiating price. I counter with "\$225". Scott declines, politely though, so I am still encouraged. Then it hits me. If I buy this set, I have to get home with it. My wife and I made a deal at Christmas. We bought each other the carry on bags with the handle and the wheels, you know the kind. The deal was that no matter how long we were traveling, the only baggage we could take was the carry on bag. JoAnne has made a couple of trips to Kansas and it works great. Tuesday night when I was packing, I had taken the old suitcase down and was packing the carryon inside it when she walked into the bedroom and mentioned that we had a "deal". 1 carryon bag.

I tried to explain that this was different, it was Dayton. I failed

to convince her (remember I take this trip every year and it is kind of touchy with wives when their husbands leave them at home and go off for 4 days with the boys.) So, I gave in and lost the battle, but not the war.

Back to the story. I then switched tactics.

"How much for the mike?"

"It is not for sale, I want to use it to get more for the set, to help sell it."

"You haven't heard my offer. \$50" The crowd around me gasped. \$50 for a mike that sold new for \$15? But remember I have looked for that mike for 4 years and this is the first one I have ever seen.

He was unable to hide the interest, even though he made a valiant effort. "No." But I could tell he was wavering.

I moved in for the kill. "\$60."

"Sold" Scott accepted.

The mike was mine!! Four years of searching was over. Ham radio is supposed to be fun. Many times the fun is in the negotiating. I decided to have some fun with Scott. "Ok, deal, but this is an estate right?"

"Yes."

"Ok, I will pay you \$70 as that was how high I was willing to go." Why did I do that? Because I don't want to cheat the widow, and by doing it, I get to "win" as Scott knows that he did not get all he could out of the deal originally. (Or did he? as I did pay \$70, maybe he figured me out and knew that I would do that. Hmmm, oh well, it is the fun that matters, and I certainly had fun.) Scott later sold the Argo 509 and filter for \$250. So the widow got even more than he thought at first as she got \$320 total.

Time for bed. I went to the room and showed my prize purchase to my roommate, Ralph Irons, AA6UL. Ralph is a long time Zuni Looper and even more important to me, a good friend. We talked and talked and talked, and soon it was 2:30 AM. I finally drifted off to sleep.

Suddenly, it was 7:00 AM and Ralph was getting me up. A quick shower and then we called Hugh, K6QD who was to ride to the hamfest with us. Day one of the Dayton Hamfest was about to start. We piled into the car and headed for Hara Arena the site of the convention. You can take busses from the hotel, but it now cost \$3 per day to ride the bus. By carpooling, we were able to split the \$5 parking fee and save some money on the bus and have the convenience of leaving when we wanted.

Dayton is fabulous. Row after row after row of flea market booths. They sell everything imaginable. We started down the rows and met Chuck Adams, K5FO and Preston Douglas WU2V who suggested that we get our tickets laminated so that we could clip it to our shirts. It only cost a dollar, and it sure saves digging for the ticket in your pocket. You must show it every time you go inside. Chuck, as usual, had a great idea. We wandered up and down the aisles checking everything out and waiting for the main arena to open at noon.

Finally, the arena opened and we went inside. The first stop was the QRP booths, all located together with G-QRP Club, S&S Engineering, Michigan QRP Club and ARCI all having a booth next to each other. It is the gathering place for all QRPers at Dayton during the day. Next we went to the TenTec

booth where I met Tom Salvetti again and looked at some cases for future projects. I bought two kits, the noise bridge and the 4 band regenerative receiver. Plus, I got a TP-41 for my Green Mountain 30.

I was wandering around inside when I saw the Kent Key booth. Robert Kent who invented the Kent Key and Paddles was in the booth. It was a real thrill to meet the man who designed my all time favorite set of paddles. Mr. Kent travels all the way from England every year to attend Dayton. His new product this year is a small PIC based keyer with Capacitive Touch Paddles. It sells for \$36 and is neat except it does not have any memories. But it does have the paddles.

I also bought a set of White Rook paddles and a book by Drew Diamond from Australia. He is a very famous QRPer in his country and the G-QRP club is reprinting the book. I bought all of the missing back issues that I have misplaced and filled out my set of Sprats. I have every issue from number 48 on and am negotiating to buy the rest. (No I won't say who has them.) I also picked up another binder to hold the copies. That is a product that I highly recommend if you are a Sprat subscriber.

Soon it was time to go back to the hotel and go to the banquet. It was a nice banquet, featuring Chuck Adams and Jim Kortge as speakers. Lots of prizes were given away including a Vibroplex bug, a Green Mountain kit, a KC-1 and a St. Louis Tuner plus lots of smaller prizes. Peter Meier did a fantastic job on the banquet.

Afterwards, we adjourned to the hospitality room. Wayne Burdick arrived and had with him the other NorCal Project that I alluded to on the internet last week. It is the KC-2 that is a keyer, LCD Frequency display, Signal strength meter, and Power meter all in a PIC based package about the same size as the KC-1. This project will be a Wilderness product and you can get pricing and ordering information from Bob Dyer. The neat thing about the KC-2 is that there is no discernable noise!!

We had a board of directors meeting that lasted until 1 AM and several of us stayed afterwards to talk. I got to bed at 2:30 again.

A couple of things came out of the Board meeting that I can talk about now, a complete summary will be printed in Buck Switzer's column in QQ. NorCal is going to sponsor the Thursday night open house again next year. We have lined up a world class QRPer to speak. Make plans now to get to Dayton in time for Four Days In May on Thursday and then stay over for the NorCal Open House speaker that night.

Next year we will fine tune the building contest just a little more. I am pleased to announce that we will have a design contest for the building contest. Yes that sounds confusing, but it is not that bad. We want designers to submit a project for consideration as next year's building contest project.

Here are the rules. It must fit in an Altoids can, it must cost less than \$25 for parts (when you order 1 of quantities from Mouser, Digikey, etc.) and it must be QRP related. NorCal will kit the winning project, and it will be used for next years building contest. Sound simple enough? Submit your projects to me, Doug Hendricks, 862 Frank Ave., Dos Palos, CA 93620. by November 1st. All projects will be considered for publication in QQ, and the

winner will become world famous! ARCI will get several construction articles to print, the members get projects to build that are cheap, and we have fun. It is a can't lose deal. I will forward all project submissions to Monte Stark for publication in QQ. Can't wait to see those new ideas.

Saturday morning Ralph, Hugh and I headed back out to the Hamvention but we stopped on the way for a quick breakfast of muffins and Diet Pepsi. Saturday is the day that I make my purchases. I had the list and went around to the vendors. I picked up a noise bridge and 4 band regen receiver kit from TenTec, a capacitive touch paddle and keyer kit from Robert Kent, plus the pots for my Green Mountain 30. Can't wait to start building it.

Every where I went I seemed to run into NorCal members. One nice thing that happened was that the guy who does the printing of QRPP had printed up 250 extra copies that I knew nothing about. He shipped them to Dayton and his expense along with a note thanking NorCal for the business and that it was a gesture of appreciation. He asked that we hand them out and we did so, distributing them through the ARCI, G-QRP and Colorado QRP Club booths. All of them were gone by early Sunday, and many tried to join on the spot, but we were not taking signups and encouraged them to send in their money to Jim Cates. I would like to say a public thank you to the printer who does not want to be mentioned publicly.

George Dobbs, G5RJV, Dick Pascoe, G0BPS and I always have dinner together at Dayton, and we chose Saturday night to do it this year. Paul Harden, NA5N, Rich High, Ralph Irons, and Hugh Matheson joined us. We decided to go to the hotel restaurant as it was handy. We ordered our dinner drinks and started talking about projects that were needed and would make good articles. Paul suggested a simple variable filter project that would have an LED indicator for 700 Hz. Both George and I became very interested and we all agreed that Paul would design it, George and I would print the article in Sprat and QRPP, and that Dick would have Kanga kit it. That was really fun. We never did get served but we came up with a neat project. It should be ready by fall as an article and soon after by Kanga.

Saturday night is the night that the projects came out. I had to help with the beer and pizza, so was unable to judge the contest. Thanks to Bill Kelsey, Dick from S & S and the judging chairman, Chuck Adams, K5F0. I don't have all of the names, but here is what I do have. First prize in the 49er building contest went to Bill Jones, AC7S of Sanger, CA. He built a homebrew rig, totally. He designed and made his own circuit boards, because he used only parts that he had in his junk box. He even took the earphone from a high impedance set of earphones and measured the inductance at 71 mH, so he used it in place of the 82 mH inductor in the kit. The Cabinet was a work of art. It was made from pcboard material and is painted Collins Gray. The dial mechanism has to be seen to be believed. It was a sandwich affair with the dial printed on a laser printer and then covered with plastic. It was calibrated and Bill had a 8 - 1 reduction drive for tuning. I called it the "Collins 49er". The prize from NorCal was a 49er kit.

Second prize went to Bill Stietenroth, K5ZTY. He did the NA5N "Pipsqueak" Regenerative Receiver, and it is beautiful. Bill mounted his in a case made from 1/4" clear acrylic, and you could see every part of the kit.

He layed out and produced his own circuit boards, and after the contest, he let me play with it. I was able to copy the BBC using only a 10 foot piece of wire connected to the ceiling of the room. I was inside the hotel, using a short piece of wire, and I was amazed at what I could hear! And to answer the question, yes I will publish the artwork in the Sept. issue of QRPp and I will get FAR circuits to do the boards so that they will be available.

Third prize went to Jeff Anderson, WA6AHL of Sunnyvale, CA who built his rig in a 9V battery case. A transceiver in a battery case!! You read it right the first time. Mike C. WA8MCQ was looking on with admiration at the job that Jeff did. Mike is the guy who built the transmitter in a pill bottle and put the article in QQ. Another guy who was impressed with Jeff's work was Roy Lewallen, who did the W7EL transceiver, that may be the most famous of them all.

Now I am going to struggle, as I did not take notes, I was too busy handing out prizes. But Steve Bornstein, Marvin Tanaka, Bob Gobrick and at least 6 others had great looking rigs. All entrants received either a 49er kit or an Embedded Research Atomic Keyer 1 kit. Thanks to the AK-1 guys, Gary and Brad for their help with the prizes. Also, thanks to Chuck, Bill, and Dick for their expert job of judging. It was tough and I was glad that I didn't have to make that decision. (But Chuck did get me back by expanding the prize pool, but it was a good decision, as all of the entries certainly did deserve a prize.)

The room finally closed down and we went to breakfast. Chuck and I stayed up until 5:30 AM talking. We finally decided it was time to go to bed when we saw guys getting up to go to the flea market. I got up at 9:30 and went out for the final day.

Sunday is always a sad day for me at Dayton. I have to say goodbye to all of the neat people that I know and meet. QRPers are truly the nicest in the world, and I consider myself very fortunate to be able to attend and meet fellow QRPers.

Next year I am going to carry a notepad, and will write down every name and call of QRPers that I talk to at Dayton. I wish that I could remember all of the names and calls. George Dobbs, Tony Fishpool, Dick Pascoe, Bruce Franklin, Buck Switzer, Mike Bryce, Myron Koyle, Bill Kelsey, Mike C., Bruce Muscolino, Pete Meir, Paul Valko, John Foote, Larry Jones, Bill Jones, Eric Swartz, Jeff Anderson, Dick and Kathy of S & S, Robin and Lowell Corbin, Gary Diana, Brad Mitchell, Hank Kohl, Jim Stafford, Ken Evans, Marvin Tanaka, Steve Bornstein, Rich Richmond, Dennis of Jade Products, Dennis Mangorang, Chuck Adams, Paul Harden, Hugh Matheson, Ralph Irons, Lee Johnson, Randy Miller, Nils Bull Young, Wayne Burdick, Roy Lewallen, Jim Kortge, Rick Zabroski, Ed Manuel, Ed Burke, L.B. Cebik, Dave Meacham, Stan Cooper, Pat Tandem, Ernie Helton, Steve Hideg, Paulette Quick, Preston Douglas, Fred Reimers, Danny Gingell, Bob White, Bob Finch, Dan Puckett, Jim Fitton, Dave Benson, the list is a lot longer, but I am exhausted and need to get some sleep.

Start now to plan to attend next year. Several of us were talking and if you want to go to Dayton you can do it for transportation costs plus about \$200, NOT including what you buy, which can add up. It is the trip to



Ham Mecca, and one that everyone loves to make. See you next year. Oh, by the way, I have leads on at least 10 articles. 72, Doug

-----14D95023E1D--

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: WJ4PRandy@aol.com  
Subject: [8704] Dayton experience  
Message-ID: <960520000708\_297854747@emout16.mail.aol.com>

Hi gang,

Just a couple of notes about Dayton...

The high point of the day (Friday) was the hospitality room at the Days Inn after the QRP dinner. I didnt get to "do" dinner cuz I didnt know if I would actually be there and didnt get a ticket in advance. (It would appear that the guy "guarding" the door had answered \*the\* question about "a last minute ticket" one \*too\* many times!!)

So, I got my own dinner (I'm a big boy) and got back in time to catch the gang going to the Qrp hospitality room afterwards. (So I have no news about the dinner. Sorry!)

After an impromptu meeting in the hallway for about half an hour (the meeting room was locked!) the QRP meeting room filled quickly. Rig after rig poured out onto the tables. The room filled up with famous and the nearly famous Qrpers

and QRP-L'ers. As a newbie it was great to finally see some the popular HB rigs of various types. I even saw a transceiver installed in a 9 volt battery case!!

I'm sorry I couldnt remember who had it there, maybe someone can "re:" that info and let us know.

I picked up an autographed copy of the "Data Book for Homebrewers and QRPers. Paul Harden (NA5N) was on hand to personalize each one.

Chuck (K5FO -the ol' fox himself!), Nils, Preston, Steve (the prolific builder),

Paul, Wayne,....My memory is awful so I'm not going to do a very good list!! In fact, I'm embarassed that I can't remember calls and names. I was pretty much in "overload"!!

Suffice it to say, there was a room full and I had a ball meeting "all'yall". A significant point of the night was the "least mile per watt" exercise

that got started

with a couple of rigs in the room QSOing each other, usually with K5F0 at one of the keys. No one could send fast enough to get by Chuck!

And, only one rig got a 229 from him (I won't divulge which one!)

As they say, " a good time was had by all" !! See you next year...

BTW, Nils looks \*fairly\* normal "in person" ...

73, Randy WJ4P

From owner-qrp-l@Lehigh.EDU Mon May 20 22:33:40 1996

From: adams@chuck.dallas.sgi.com (chuck adams)

Subject: [8707] Dayton Report de K5F0

Message-ID: <199605200808.IAA06126@chuck.dallas.sgi.com>

Gang,

I was on the plane to Dayton 8a.m. on Wednesday. I won't go into the gory details about how I was supposed to be on a plane to Dayton by 7a.m. and a ticket agent sent a bunch of people to the wrong gate and we all missed it. Plane was at a gate the other side of the terminal and for those who have had the pleasure of coming through or to DFW know what I mean.

Paul Harden, N5AN and famous author, gave me a ride to the hotel. Many thanks to my friend from the Desert. He will spin a tale when he gets rested up that you will find hard to believe. It all has to do with Riley NM.

Friday night gang of about 25+ to the Olive Garden for meal and talk about all kinds of things. Quite a collection of who's who from all over the world.

Thursday found a group of a 100+ sharing talks and adventures in the QRP world at FDI. Walked over to another restaurant near the hotel for food and friendship at the end of the day. Back to the hotel for Paul's talk on rigs and then meeting the vendors and playing with their toys. Many thanks to Paulette Q., Bob G., Preston D., and Bruce M. for the great work and effort that went into the first FDI. We all are looking to many more. Every journey begins with a single step and this was a great one. Preston Douglas WJ2V did a super job on the badges both for FDI and the QRP-L list. Many thanks

Preston. An effort greatly appreciated and treasured by all. I have 1995 and 1996 in plastic now for the start of what I hope is to be a large collection of valuable badges.

Friday morning found us taking the bus to the flea market. It threatened to rain big time but we got lucky. The rest of the week was hot/sunny/humid. That's it for the wx report from Dayton. :-) Maybe one more mention later about some wind on Sat.

The convention center opens at noon and it's inside to see what's what and who's who. Lots of old friends and new ones everywhere.

Friday night finds us at the banquet for food and fun. Got a new outlook on bicycling mobile and what is involved in getting a working setup going. Not something for people like myself who get their exercise going from the couch to the frig. :-)

Sat was back to the market and convention center. Put many miles on the sneakers in the flea area. Ran into WBL designs and the V2L paddle. W9WBL, Stan Hails Jr., is one of the FOC (Fast Operators Club) that hangs out around 7.030. If you run across a group of CW ops on this freq running from 50wpm to 100wpm (that is not a typo) then this is the group that you are hearing.

The WBL V2L paddle is the one that you may see in ads that has the mechanism in a vertical position. Randy Rand, AA2U, and I were wandering the market and we both set down and played with the paddle and talked to Stan at some length. The wind picked up the umbrella and blew it into the next row of tables while we were setting there. Did we tell you about the wind? :-) I wound up buying a paddle as did Randy. Now looks like I am a collector of paddles, since I've run outta rigs to buy. :-) Film at 11. This one is a beauty and priced at \$105 at Dayton.

So by now the empty bag is getting heavy.

Back to hotel at end of day and another group off to same restaurant as previously. I was pleasantly surprised that they allowed us back in. :-) Wayne N6KR, Eric WA6HHQ, Jeff (no call for him), and Randy AA2U.

Then to the Saturday pizza and drinks in the hospitality suite of the Days Inn South. This is the biggie of the weekend for the QRP crowd. Nils had taken his medication

and was behaving pretty good. I will write a letter to the home and thank them for letting him out for a short period. I see that he made it home OK. This guy in person talks just like he does in his postings. I am just a little boy from the desert and grew up in a small town with a population less than 800. Heck, there were only 80 kids in grades 1-12. If I had graduated there, the SR class would have had 8. :-) I thought there weren't too many countries in the world other than Texas. :-) ;-)  
So I get lost with the his talk of regimes and world events. Even the Dallas Morning News doesn't have all countries discussed in it. Nils can probably from memory list all 340 or so on the ARRL DXCC country list. Thanks for holding the board until next year Nils.

Lot's of show and tell. S&S Engineering (Dick and Cathy), Wilderness Radio (Wayne), 624 Kits(Pat), CQC(Rich), Embedded Research(Gary and Brad), Adventure Radio(Lee), SWL(Dave), and many others that I have forgotten to write down or inadvertantly missed. Others will mention them I'm sure. My apologies for a small mind and a bad short term memory.

At 9p.m. we were supposed to judge the building contest. Doug H. KI6DS was busy with the pizza and drinks. About 9:20 or so I was getting anxious as was the contestants. Doug told me to take care of it was he was tied up. His first mistake of the night!! :-) I went over to Wayne Burdick and Paul Harden the other two judges, but they were tied up and didn't have a relief person to stand in. So Dick at S&S and Bill at Kanga USA and I set out to judge the 12 entries in the contest. This was a tough job, but I think with the great ideas of Dick and Bill, the results worked out great. Many many thanks to Bill and Dick for their hard work in this contest.

The results that I have, from memory, are

1st - Bill Jones from Sanger CA

A HomeBREW 40-9er with a beautiful cabinet made from PC board, homebrew PC boards with rcvr and xmtr separate. His dial display alone would have gotten him first place. Steve H. will have some pictures on his web site later in the week.

2nd - Bill Stietenroth from Houston TX

A HOMEBREW NA5N regen receiver in a homemade plexiglass cabinet. His own homebrew PC board with his own layout. Also I think that Doug H. will have an article in QRPp. Beautiful work Bill.

and here the memory fades rapidly and I apologize. Two things happened in the excitement. Noone took notes as I was showing the results to the crowd and afterwards the winners shot outta the room in a hurry (or so it seemed) to go back to the room to build the kits they won.

Other entries and winners were (and in no particular order)

Bob Gobrick	V01DRB	Champlain NY/Canada
Jeff Anderson	WA6AHL	Mt View CA
Bob White	W03B	Pasadena MD
Marvin Tanaka	KH6MM	Wailuku HI
Dennis	KQ6AG	

My apologies to those that I omitted. See next paragraph. They all won either keyer kits from Embedded Research (many reviews to follow from builders this week or so) or another NorCal 40-9er. Steve Hedig will have pictures on his web site shortly. Thanks Steve.

If you were a winner, send me email describing your rig and what place you won, please. We'll record for the historians to expand upon. I'll repost and we'll get Doug to print it in the QRPP. Also if you know of a winner that I ommitted send me email.

Now one that I think that I missed the name on was a modified 40-9er built in a 9V battery case. Roy Lewellan W7EL was impressed with this one too. This was the xcvr inside the case and the 9V for power was connected to it. We didn't really understand what was inside until after the contest and the rig was taken out of the case. Schematic was glued to outside of case.

I decided, since Doug H. put me in charge that he should get something in return. :- ) I awarded 7 entries all equal rank, thus all tied for 6th place which was the last place to receive an award. Doug was not aware that this was going to happen until he saw me turn around from my stand on top of the chair (so that people could see me) and he instantly realized that I had him where he could not run nor could he hide. Justice does prevail after all. :- ) Since Doug was handing me prizes as I announced the winners I expected to have for 6th place extensions/renewals/or new subs to QRPP. But when I turned around Doug was holding a 40-9er kit. Thus at \$25 each that was another \$150 in prizes. But Doug H. came up the prizes without as much as a whimper and he

did laugh knowing that there wasn't anything he could do. K5FO strikes again!! :-) Doug is a friend and we play these little games all the time. Makes life interesting and keeps us on our toes when we are at the same place at the same time. The QRP community is fortunate to have him among us. A big Texas Thank You Doug. Doug will post later the rules for next years contest. It promises to be extra exciting. So stay tuned and pay close attention. There will be a quiz later.

It was much better this year to have the building done before hand, thus giving each individual time to do their best work and we all had more time to mix with others and talk. I know that I still didn't get the opportunity to meet all of the people there. Come on back next year.

We closed up the suite at about 1:30a.m. and then a group walked over (did I tell how far we walked? pretty far.) to another restaurant a block away for an early breakfast. I didn't get to bed before 5:30a.m. and then up at 8.

You just don't sleep at Dayton. With all my travels this was the only time that I had wished the flight was longer. :-)

The Merry MD Milliwatters, W03B K3TKS WA8MCQ and W6TOY were kind enough to give me a ride back to the airport. Ruined their reputation for sure. I appreciate it guys.

New toys showing up at Dayton. Digital VFO from S&S. New KC-2 keyer from Wayne N6KR (super combo of LCD display, power meter, keyer, and freq display for the rig). Keyer from Embedded Research. Frequency display for rigs from Adventure Radio. And others that slip my mind at the present.

I was saddened by two things. Everyone that goes to Dayton can probably attest to the fact that the clock speeds up in the universe. It seemed like only an hour passed since the time I got off the plane and the time I was getting back on the plane to leave. So much to do and so little time. I know that I missed some of you and I hope that we can get to some place at some time and meet. Looking forward to it.

At the FISTS table on Saturday I was saddened and touched to learn of the passing of John Hugentober Sr N8FU from Cincinnati age 56 due to heart attack after mowing the

lawn in order to leave for Dayton. I had never met him personally but had worked him on the air. I hope that we all remember that we are here just for a small period of time and that we have to enjoy what we are doing. Life is just too short.

And so for John and the many that we loose each year we send along the CW salute:

dit dit

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Chuck Adams (K5FO CP-60) adams@sgi.com

K5FO TMPS 1996 Qs=016 States=12 Confirmed=05 DX=01

AZ CA CO IL IN MI OR SD TX UT WI WY

From owner-qrp-l@Lehigh.EDU Mon May 20 22:33:40 1996

From: Mike Robinson <miker@cc.com>

Subject: [8757] ExpII received

Message-ID: <9605202245.AA01142@voder.nsc.com>

Bob Schnick and all,

I received the Explorer II an hour ago and put it up on my dipole at work. Made a contact right away. 579 from Arizona. Not a big hop but still impressive for 2.5w. I haven't lifted the hood yet, but I'd say you did a nice job on it.

Thanks,

=====  
NCARC Superfest, June 1st, Larimer County Fairgrounds, Colorado

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AA0UB TMPS 1996 Qs=006 States=04 Confirmed=02 DX=01

CA LA OR SC

=====

7.3 de Michael AA0UB miker@cc.com michael@frii.com

<http://www.frii.com/~michael>

QRP-L #126 Norcal #857 CQC #180

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From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: bruce muscolino <w6toy@pop.erols.com>  
Subject: [8721] Four Days in May -- FDIM -- Proceedings information  
Message-ID: <199605201536.LAA15103@smtp2.erols.com>

Gang,

As you should all know we just finished putting on the largest and most successful QRP event in the free world. FDIM, or Four Days in May. Ten noted figures in QRP and your scribe wrote and presented technical papers on several topics of interest to QRPers all over. The authors and their topics were:

LB Cebik -- Short Yagi ANTennas  
Walt Thomas -- An Attic Loop Antenna  
Ed Manuel -- Vee Beams  
George Dobbs -- Homebrewing Options (Outline and

Bibliography)

Bill Kelsey -- Direct Conversion Receivers  
Dick Szakonyi -- Receiver Design (Outline only)  
Kathy Szakonyi -- Building Hi-tech Kits  
Bob White -- Milliwatting  
Chuck Adams - The 30 meter Propagation Study  
Danny Gingell -- QRP nets  
Myself -- Helically wound HF Antennas

As you can see, this is information you should have on your bookshelf for reference. Copies of the "proceedings" of the conference, a complete collection of all the papers, are available from me. The price is \$20.00 including postage -- the book is about 125 pages 3-ring bound and includes the binder. My mailing address is:

Bruce Muscolino  
PO Box 9333  
Silver Spring, MD 20916-9333

Please make checks or money orders payable to me.

We will be doing this conference again next year -- please include us in your travel plans.

73,

Bruce -- W6TOY/3  
QRP, Really! (c)  
FDIM Technical Chairman

--

Bruce -- W6TOY/3  
QRP, Really! (c)



From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: buhyoff@mail.vt.edu (Gregory J. Buhyoff)  
Subject: [8709] FS:11 amp switching power supply  
Message-ID: <199605201237.IAA29498@sable.cc.vt.edu>

Ten-Tec Model 939 11 amp, 13.8V ,115/230 VAC switching power supply. Really small and light. It is the power supply they advertise for the Scout. Great portable supply for anything demanding up to 11 amps. I have two of them. One of them has been powering a packet station for over 2 years now without so much as a glitch. \$95.00 new from Ten-Tec. I am asking \$50.00 including UPS shipping. Please call 540-231-5148 between 7am and 4pm weekdays. Leave a message if I am not in. Or, contact me at Buhyoff@vt.edu.

Thanks, Greg KN4FR

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Gregory J. Buhyoff  
Julian N. Cheatham Professor  
Dept. of Forestry  
304 Cheatham Hall  
Virginia Polytechnic Institute and State University  
Blacksburg, VA 24061

Buhyoff@vt.edu  
Office 540-231-5148  
Fax 540-231-3698

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: svein@eci1.ucsb.edu (Svein Vetti)  
Subject: [8738] Gain of LNA ?  
Message-ID: <9605202002.AA25691@jasmine.ucsb.edu>

I am building a LNA for a VHF receiver using Motorolas MRF901 (BJT). Is there any rule of thumb on how much gain an LNA should have. The rest of the receiver is taken care of by a Motorola chip (I don't have the number here but I think it is 13145) with a first mixer conversion gain of about 17 db.

Svein Vetti

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: Bob\_Tellefsen-CNSE97@email.mot.com  
Subject: [8726] Gates Batteries  
Message-ID: <M840857.015.pso4f.1.960520173132Z.CC-MAIL\*/OU=LMPCC10/OU=ILBE/  
PRMD=MOT/ADMD=MOT/C=US/@MHS>

(Also posted to HamTech list)

I need charging help with some GATES CYCLON lead-acid batteries.  
The batteries have 2V 25 A-H BC cells arranged in a 12V battery.

1. Can anyone tell me the correct charging arrangements for these batteries?  
Charging current max, terminal voltage at full charge, max discharge current  
under load, discharge terminal voltage, etc.
2. If not, can anyone give me a technical support contact at Gates that might  
be able to help me?

Thanks, Bob T. N6WG

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: Scott Rosenfeld NF3I <ham@w3eax.umd.edu>  
Subject: [8718] Good time and total exhaustion at Dayton  
Message-ID: <Pine.3.89.9605200945.F697-0100000@w3eax.umd.edu>

I left last Saturday morning, drove to Indy and proceeded to break down  
Sunday on the way out of town on I-65, right lane in construction zone.  
Made a call on 146.700 and had state police and tow truck there within 20  
minutes! Quick replacement of plugs and distributor rotor at Pep Boys  
got me back on road to Des Moines (yes, Des Moines). Did I mention we  
hopped the barrier (me and 70 pound dog)? HT and repeater guide in hand, I  
proceeded to leave the directory on the other side of the barrier :(

If you live in Indianapolis, it's on the northbound side of I-65 in the  
construction area. Looking to the south, you can see a walking overpass  
as well as a sign for MLK Avenue. Feel free to go and get it, although  
it's been out in the rain for 8 days.

Made the rest of the trip to Des Moines and worked for three days.

Drove from Des Moines to Dayton Thursday, first 200 miles in fog.  
Finally cleared up in Galesburg, IL! Very fun ride, great weather, great  
people. Showed up at FDI at 4:30...sorry I missed it...

Was fun living like a bachelor. Should've seen what the bunch of us did

to that hotel room...

At the flea market, Friday morning...

- 1) I ran into BV/N0IAT, with whom I have talked via Internet on numerous occasions; didn't know it until I saw the card on the table of stuff for sale.
- 2) I ran into four or five people from HOME whom I didn't know were going.
- 3) I ran into two people whom I'd met on 2m on my way into town from Des Moines.
- 4) I ran into Scott (KB2GWF) and Brad Mitchell (WB8YGG), QRP-L members. A gentleman was selling a Ten-Tec 1208 xverter for \$95. We started talking, and turns out, HEY IT'S YOU! I SOLD YOU THAT KIT!!! I tried to get my friend Bill (KB8USZ) to buy it, but, well, he had a shopping list and it was on the hairy edge.

The banquet was cool - lots of food, good times, and I WON SOMETHING!!! Thanks to the St Louis QRP Club for my audio amp kit!

Saturday was hot. Prices were too high. Really, people should check around before pricing their stuff. An occasional bargain or two, otherwise just too expensive for used gear. Exhausting day.

Saturday night was spent making cables. We got to the hospitality suite and all of the pizza was gone. Went back to the hotel and had a wine cooler and, lightweight that I am, got drunk (no kidding). Packed up and left at 8:40 a.m., and drove 500 miles to home.

An unbelievable time!

When I got home, one of the cats proceeded to break a \$50 Lenox picture frame. Sam the beagle took a whiz on the rug. I was definitely home.

\* Scott Rosenfeld NF3I Burtonsville, MD FM19 QRV 80-10/6/2/440 \*  
\*\*\* VHF @ <25w, HF @ <5w \*\*\* Save a cake, pound BRASS instead \*\*\*  
\* 138 cfd with dipoles \* QRP-L #147 QRP ARCI #9054 DXCC/WAS/WAC \*  
\* 301-549-1022 h / 301-982-1015 w \* 145.490- 147.225+ PL 156.7 \*

From owner-qrp-l@Lehigh.EDU Mon May 20 22:33:40 1996  
From: "P. Grover Cleveland" <wylde@nccn.net>

Subject: [8715] Need Temporary Unsubscribe Command  
Message-ID: <199605201414.HAA29460@nccn.net>

Sorry - I can't find the "going on vacation so unsubscribe me command" -  
please advise.

mni tnx

Grover

- - -  
P. Grover Cleveland  
WT6P (ex KC7IW, WA6WJV)  
ARCI 3795, NorCal 216, ARS 101  
Fairmont Track Speeder Pilot &  
Archaeoferroequinologist

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: Dave Matthews <dmatt@roch875.mc.xerox.com>  
Subject: [8750] New ham, what to build  
Message-ID: <9605202327.AA10936@chip>

I heard this list mentioned on the repeater this morning and had to find it.  
It took one query on altavista. Then when I got home my Mouser catalog had  
arrived. Now if I can only figure out how to get Xerox to pay me without me  
having to show up :-).

The story:

A few weeks ago I decided to finally get my ticket. My father has had one  
for years (W2IJL) and many of my uncles have them. The wife had been  
talking about taking the kids camping in the boonies so I figured that a 2m  
HT would be a good thing to haul along. On a Monday I found a VE session  
that Thursday. I had learned it all many years ago but was rusty. Three  
days with Now You're Talking and I relearned enough to get a tech. Now I  
need to listen a while to build the code speed back up - I was amazed at how  
much I could copy of the 20 wpm test that they gave while I was there. So I  
need a rig that will hit the novice bands. It also has to be small and  
cheap (too many expensive hobbies). The antenna will be a random length of  
wire (or the rain gutters). I have built a few R/C systems and computers  
over the years and was a Nike-Herc van rat so QRP home built looks like the  
answer.

What is a good rig to start out with? I would like to stick with

transistors. Point to point wiring is OK. Scratch built is OK. CW and SSB would be nice but CW alone is good enough. All suggestions (other than buy it built) are welcome. The Rochester hamfest is coming up so I will be able to go toy shopping.

Dave

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: Doug Hendricks <ki6ds@telis.org>  
Subject: [8749] No Separate Dayton List Next Year  
Message-ID: <31A0FD47.2257@telis.org>

Lets not have a separate list for Dayton next year. Keep it here on the list so that we all have a chance to see it. I don't want to separate QRP info, I love having it all in one place.

By the way, the weather was beautiful in Dayton.  
72, Doug, KI6DS

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: Jeffrey Hetherington <jhetheri@freenet.npiec.on.ca>  
Subject: [8737] NorCal Logo  
Message-ID: <Pine.SGI.3.91.960520153251.5888A-1000000@freenet.npiec.on.ca>

Is there anybody on the list that has a clear NorCal logo in any format (.gif .jpg .pcx etc.)? I am printing up a new batch of QSL cards, and would like to include the logo.

Tnx.

Jeff - VA3JFF

=====  
L. Jeffrey Hetherington - VA3JFF  
Niagara Falls, Ontario, Canada  
VA3JFF TMPS 1996 Qs=012 States=10 Confirmed=00 DX=01  
CO CA NY IN SD WI TN GA IL TX (OZ7)

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996

From: Scott Rosenfeld NF3I <ham@w3eax.umd.edu>  
Subject: [8720] P.S. on exhaustion  
Message-ID: <Pine.3.89.9605201005.C921-01000000@w3eax.umd.edu>

I did have a great time meeting everyone at the QRP functions.  
Unfortunately, I was so tired from hamfesting that it was all I could do  
to merely function (did entire flea mkt three times).

Recommendation to hamfest officials:

PUBLIC DRINKING WATER IN THE FLEA MARKET!

\* Scott Rosenfeld NF3I Burtonsville, MD FM19 QRV 80-10/6/2/440 \*  
\*\*\* VHF @ <25w, HF @ <5w \*\*\* Save a cake, pound BRASS instead \*\*\*  
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\* 301-549-1022 h / 301-982-1015 w \* 145.490- 147.225+ PL 156.7 \*

From owner-qrp-l@Lehigh.EDU Mon May 20 22:33:40 1996  
From: "Andrei Morosan" <MOROSAN@lic\_dc ldc.sfos.ro>  
Subject: [8708] program  
Message-ID: <28453282A85@lic\_dc ldc.sfos.ro>

\* This message contains the file 'CODEBEEP.EXE', which has been  
\* uuencoded. If you are using Pegasus Mail, then you can use  
\* the browser's eXtract function to lift the original contents  
\* out to a file, otherwise you will have to extract the message  
\* and uudecode it manually.

begin 660 CODEBEEP.EXE

```
M35I`3L<@??`28$)J2;!0!```#`!0````````H%```#`/!0``V04``-X%```#F
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M``!<!@``808``&8&``!N!@``?08``(,&``"(!@``D`8``*`&``"E!@``J08`
M`+(&``#`!@``QP8``P&``#4!@``Y`8``.D&``#N!@``]08``8````+!P``
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M!P``=0<``(```"%!P``C0<``)\``"D!P``J0<``+L``#`!P``Q0<``-<`
M`#<!P``X0<``.L``#P!P``^<``H(```/"``%`@``"8(```K"`````,`@`
M`$((``!"``3`@``%8(```!;"``8P@``'4(```!Z"``?P@``)`$(```6"``
MFP@``*T(```"R"``MP@``D(```#.```TP@``.4(```#J"``[P@``$)```&
M"0``"PD``!T)```B"0``)PD``#)$)```V"0``2`D``$T)```!2"0``7`D``&$)
M``!K"0``<`D``'@)```*"0``CPD``)0)```<"0``K0D``+,)```X"0``P`D`
M`-(```#7"0``W`D``.$)```#M"0``\0D``0*``)`@``#0H``!0*``="0``
M+PH``#0*``Y"@``2PH``%`*``!5"@``7PH``&0*``!I"@``A0H``)$*``"<
M"@``J0H``*X*``"S"@``O`H``4*``#*"@``TPH``-P*``#E"@``Z0H``/,`*
M``&P``#PL``!0+``="P``)@L``"\+``T"P``/0L``$T+``!8"P``8PL`
M``'+``!U"P``>0L``)0+``"A"P``K`L``+<+``#""P``S0L``-(<+``#7"P``
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MX`L``.D+`#N"P`]PL``,``,`)`#```#P`!<`,`@#```\*OP`"X`,``W  
M#```O`P`\$D`,`!.`#```5PP`&H`,`!S#```>`P``(\$`,``\*#```DPP``)@,  
M`"A#```J@P``,``,``X#```POP`,`H`,`#3#```V`P``. \$`,`#Q#```\_@P`  
M`D`-`4#O```PT`"H`-`O#O`-`T`\$X`-`!;#O`9@T`'\$`-`!\#O`  
MAPT` (P`-`"1#O`F@T`\*,`-`"H#O`LOT`+H`-`##O`R`T`-`\$`-`#:  
M#O`XPT`.`@`-`#Q#O`^@T`,``,``(#@`\$OX`"O.`M#O`,`@X`#L.  
M`!\$#@`3OX`%(.`!;#@`9`X`&T.`!R#@`>PX` (O.`-`#@`D@X`  
M`)L.`"K#@`N`X`,``,``#.#@`VOX`.O.`#I#@`[@X``@/`5#P`  
M(`\`"L/`V#P`.P\`\$`/`!)#P`4@`\`%</`!@#P`:`O\`'(/`!W  
M#P`@`\` (D/`"2#P`EP\`\*`/`"S#P`O\`,`,\$/`#\*#P`TP\`-P/  
M`#A#P`Z@`\`/,/`#/#P`1`H`O`:\$`Q`#(O`)]\$`2!`  
M`\$T0`!2\$`:`1`00`!\_\$`BA`(\O`"4\$`G1`\*80`"K\$`  
MM!`,`00`#-\$`TA`-LO`#K\$`]A`\$1`,`\$0`\$1\$`!81`P  
M\$0`.Q\$`\$81`!1\$0`7!\$`&<1`!R\$0`=Q\$`'P1`"%\$0`CA\$`),1  
M`"<\$0`I1\$`\*X1`"S\$0`O!\$`,`41`#.\$0`TQ\$`-P1`#E\$0`[A\$`  
M`/,1`#/\$0`#Q(`!@2`=\$@`)A(`"\2`X\$@`/1(`\$82`!/\$@`  
M6!(`%T2`!F\$@`;Q(`@2`!)\$@`AA(`)82`"A\$@`K!(`+<2`#"`  
M\$@`S1(`-@2`#=\$@`XA(`/P2`))\$P`%!,`,`!3`J\$P`+Q`,`#03  
M`\$]P`1A`,`\$L3`!4\$P`71`,`&83`!K\$P`=!,`,`T3`"&\$P`BQ`,`  
M`)03`"G\$P`L!,`,`+43`"^\$P`QQ`,`-3`#5\$P`WA`,`.<3`#P\$P`  
M]1`,`/X3`%.`&Q0`"84`Q%`!/O`\$4`!&%`8!0`&L4`!V  
M%`@10` (P4`"7%`HA0`\*<4`"L%`M10`+X4`##%`S!0`-44  
M`#>%`XQ0`.P4`#U%`\_A0`,`5`,`%0`%14`!X5`C%0`+!4`  
M`#5`!(%0`314`%85`!%0`!4`&T5`!V%0`?Q4` (@5`"-%0`  
MEA4`)\5`"H%0`K14`+85`#&%0`T14`-P5`#G%0`\A4`/T5`(`  
M%@`#18`!(6`L%@`-Q8`\$ (6`!-%@`6!8`%T6`!B%@`:`Q8`'06  
M`!Y%@`@A8` (L6`"4%@`F18`\*(6`"U%@`OA8`,`6`#,%@`U18`  
M`-X6`#C%@`[!8`/P6`'P`\$A<`!T7`H%P`+1<`#(7`!,%P`  
M5Q<`&(7`!M%P`>!<` (47`" \*%P`CQ<`)@7`"A%P`IA<`\*~7`"X  
M%P`P1<`,`87`#/%P`V!<`. \$7`#F%P`[Q<`/@7`!&`!A@` \8  
M`B&`\*Q@`#8`Y&`OA@`\$L8`!0&`61@`&(8`!K&`<!@`  
M`D8`""&`BQ@`)8`"9&`J1@`+08`"\_&`RA@`-48`#B&`  
MYQ@`.P8`&&O`\$QD`!X9`K&O`,`!D`#49`^&O`1QD`\$P9`!5  
M&O`7AD`&<9`!L&O`=1D`X9`" &O`C!D`)49`"H&O`L1D`+89  
M`"\_&O`R!D`-\$9`#6&O`WQD`.@9`#Q&O`]AD`/9`/ &@`!H`  
M`"<:`T&@`.1H`#X:`!8&@`8QH`&X:`!Y&@`A!H`(\:`":&@`  
MGQH`\*O:`"M&@`MAH`+L:`#\$&@`S1H`-8:`#;&@`Y!H`.T:`#V  
M&@`^QH`0;`,`-&P`%AL`!L;`,`D&P`-QL`\$;`,`!%&P`3AL`%<;  
M`!@&P`91L`&X;`,`!W&P`@!L` (4;`,`.&P`EQL`\*`,`"E&P`KAL`  
M`+X;`,`#)&P`U!L`-\\;`,`#J&P`]1L`<`%`"AP`"\$<`N`  
M.QP`\$`<`!%`3AP`%<<`!<`91P`&X<`!W`?`!P` (4<`"5  
M`GAP`\*,<`"L`M1P`+X<`##`S!P`-P<`#I`]AP`/L<  
M`'0`&AT`"<=`R'0`/1T`\$ (=``!'0`4!T`%D=`!>'0`9QT`  
M`'=`!Y'0`?AT` (<=`":'0`HQT`\*@=`"Q'0`NAT`,`=``#('0`  
MT1T`. \$=`#N'0`^1T`O>`) '@`#AX`"@>`U'@`O!X`\$T>`!2  
M`@`5QX`&>`!I'@`;AX`<>`" '@`B1X` (X>`"7'@`H!X`\*D>  
M`"N'@`MQX`,`H>`#3'@`V!X`. \$>`#J'@`\QX`/@>`!P`"A\  
M`!`,`?`8`P` (1\`#\$?`^P`21\`%8?`!;`P`8!\`'H?`"%P`

MD!\`)\L?``"F'P`L1\``+P?`#!'P`QA\``,\?`#8'P`W1\``.8?`#0  
M'P`^!\`)/T?``&(``#R``!@@``=(``)B``"\@``X(``/2``\$8@  
M``!9(``8B``&<@``!P(``>2``((@``"('`D"``)D@``"B(``IR``  
M`+'@``"Y(``PB```,`<@``#0(``X"``.L@``#V(``2\$``PA``7(0``  
M(B\$``"<A``L(0``1B\$``%,A``!>(0``:2\$``8A``![(0``@\$``(DA``"2  
M(0``ER\$``\*A``"I(0``LB\$``+<A``#'(0``R2\$``-(A``#7(0``X"\$``.DA  
M``#R(0``]R\$``B``3(@``"('"\$B``J(@```,R(``#PB``!!(@``2B(`  
M`%,B``!<(@``82(``&HB``!S(@``?")(``(\$B``"\*(@``FB(``\*<B``"R(@``  
MO2(``,`HB``#/(@``U"(``.XB``#Y(@``!",```\C``: (P``)2,``"HC``0  
M(P``.",``\$C\$``!&(P``3R,``%@C``!A(P``9B,``&\C``!X(P``@2,``(8C  
M``"/(P``HB,``\*LC``"P(P``N2,``(C``#+(P``T",``-DC``#B(P``ZR,``  
M`/C``#Y(P``"20``!0D``?)``\*B0``#4D``!)``120``\$HD``!D)``  
M;R0``'HD``")``D"0``)LD``"@)``I20``\*XD``"W)``"0"0``,4D``#.  
M)``UR0``-PD``#E)``[B0``/<D``#)\``!24``!@E``A)0``)B4``"\E  
M``X)0``024``\$8E``!/0``6"4``&\$E``!F)0``;R4``'\E``")0``E24``  
M`\*E``"K)0``MB4``+LE``#')0``UR4``.(E``#M)0``^"4``/TE``")@``  
M"R8``!0F``9)@``(B8``#(F``[)@``0"8``\$DF``!9)@``9"8``&\F``!Z  
M)@``?R8``(0F``">)@``J28``+0F``"\_@``RB8``-4F``#:)@``WR8``.@F  
M``#Q)@``]B8``/\F``()P``\$2<``!8G``?)P``\*"<``#G``V)P``/R<  
M`%(G``!);)P``8"<``&DG``!R)P``>R<``('G``"))P``DB<``)LG``"@)P``  
MJ2<``+DG``#P)P``SR<``-HG``#E)P``\ "<``/4G``#Z)P``%@"!H``J  
M\*``-2@``\$H``!+\*``5B@``%LH``!@\*``:2@``(H``!W\*``"@@``(DH  
M``"2\*``ER@``\*H``"I\*``LB@``+<H``#\*``R2@``-(H``#7\*``X"@  
M`/,H``#\*\\*``2D``HI``3\*0``"D``"\$I``J\*0``RD``#PI``!!\*0``  
M2BD``%,I``!<\*0``82D``&HI``!Z\*0``A2D``)I``";\*0``IBD``+\$I``"\  
M\*0``P2D``,8I``#@\*0``ZRD``/8I``!\*@``#H``!<J``<\*@``(2H``"HJ  
M``S\*@``."H``\$DJ``!\*\*@``4RH``%@J``!A\*@``:BH``,J``!X\*@``@2H``  
M`)0J``"= \*@``HBH``\*LJ``"T\*@``02H``,(J``#+\*@``U"H``-TJ``#B\*@``  
MZRH``/LJ``&\*P``\$2L``!PK``G\*P``,BL``#<K``\\*P``5BL``&,K``!N  
M\*P``>2L``(0K``"/\*P``E"L``)DK``"B\*P``JRL``+K``"Y\*P``PBL``,LK  
M``#0\*P``V2L``.(K``#K\*P``\ "L``/DK``"+``"RP``!L``9+``"+P``  
M`#4L``Z+``0RP``\$PL``!5+``6BP``&,L``!L+``=2P``'HL``"#+``  
MC"P``)4L``":+``HRP``+,L``#`+``RRP``-8L``#A+``["P``/\$L``#V  
M+``\$T``!TM``H+0``,RT``#XM``!)+0``3BT``%,M``!<+0``92T``&HM  
M``!S+0``?"T``(4M``"\*+0``DRT``)PM``"E+0``JBT``+,M``"\+0``Q2T``  
M`,HM``#3+0``YBT``.\M``#T+0``\_2T``8N``/+@``%"X``!TN``F+@``  
M+RX``#0N``]+@``1BX``\$N``!4+@``72X``&TN``!Z+@``A2X``)N``"=  
M+@``HBX``\*<N``#!+@``SBX``-DN``#D+@``[RX``/HN``#\_+@``!"\``TO  
M``6+P``&R\``"00``M+P``-B``#LO``!\$+P``32\``%80``!;+P``9``\  
M`&TO``!V+P``>R\``(00``"7+P``H"``\``\*40``"N+P``MR\``,0``#%+P``  
MSB\``-<0``#@+P``Y2\``.XO``#W+P``#``4P``.,``C``"LP``V  
M,``03``\$PP``!7,``7#``&\$P``!Q,``@S``(@P``"-,``G3``\*<P  
M``"L,``0#``,XP``#3,``V#``/(P``#\_,``"C\$``!4Q``@,0``+3\$``  
M`#(Q``W,0``0#\$``\$DQ``!.,0``5S\$``&Q``!I,0``;C\$``<Q``",0``  
MB3\$``(XQ``"7,0``H#\$``\*DQ``"N,0``MS\$``,Q``#),0``SC\$``-<Q``#Q  
M,0``\_#\$``<R``2,@``3(``@R``U,@``.C(``#R``!(,@``43(``%8R  
M``!?,@``:#(``\$R``!V,@``?S``(@R``"1,@``EC``)\R``"H,@``L3(`  
M`+8R``"\_,@``R#(``-\$R``#6,@``WS``/DR``\$,P``#S,``!HS``E,P``



M,#,``#TS``!",P``1S,``%`S``!9,P``7C,``&<S``!P,P``>3,``'XS``"'  
M,P``D#,``)DS``">,P``IS,``'+`S``"Y,P``OC,``',<S``#0,P``V3,``'-XS  
M``#G,P``30``'PT``'7-``'(C0``"TT``'X-``'130``\$HT``!/-'6#0`  
M`&\$T``!F-``';S0``'@T``"!-``'AC0``(\T``"8-``'H30``\*8T``"0-``'  
MN#0``,\$T``#&-``'SS0``-@T``#A-``'YCO``.\T``')-0``%#4``!\U``'J  
M-0``'-34``\$`U``!--0``4C4``%<U``!@-0``:34``&XU``!W-0``@#4``(DU  
M``".-0``ES4``\*`U``"I-0``KC4``'+<U``#-0``R34``',XU``#7-0``X#4`  
M`.DU``#N-0``]S4``!\$V``'<-@``)S8``#(V``']-@``2#8``%,V``!>-@``'  
M8S8``&@V``!Q-@``>C8``'\V``"(-@``D38``')HV``"?-@``J#8``'+\$V``"Z  
M-@``OS8``',@V``#1-@``VC8``'-\V``#H-@``\38``'/HV``#\_-@``"#<``"(W  
M``'0-P``.C<``\$4W``!0-P``6S<``&8W``!K-P``<#<``'DW``"''-P``AS<`  
M`)W``'9-P``HC<``\*<W``"P-P``N3<``,(W``#'-P``T#<``'-DW``#B-P``'  
MYS<``'/W``#Y-P``C@``'<X``'0.``'\*C@``#<X``"!..``33@``'%X``!C  
M.``';C@``',X``!X.``'@3@``(HX``"/.``'F#@``\*\$X``"J.``'KS@``'+@X  
M``#!.``'RC@``',\X``#8.``'X3@``.HX``#0.``'^#@``'\$Y``'\*.`0``#SD`  
M`!@Y``'R.0``/SD``\$HY``!5.0``8#D``&LY``!V.0``>SD``('Y``").0``'  
MDCD``)<Y``"@.0``J3D``'+(Y``"W.0``P#D``',DY``#2.0``USD``'.Y``#I  
M.0``\CD``'/<Y``'.@``"3H``!(Z``'7.@``'(H``#HZ``'!.@``4CH``%TZ  
M``!H.@``<SH``'XZ``'#.@``B#H``')\$Z``":.@``GSH``\*@Z``"Q.@``NCH`  
M`+\Z``#(.@``T3H``'-HZ``#?.@``Z#H``'/\$Z``#Z.@``\_SH``'@[``'1.P``'  
M&CL``!\[``'H.P``.SL``\$0[``!].P``4CL``%L[``!D.P``:3L``'([``![  
M.P``A#L``(D[``"2.P``FSL``\*0[``"I.P``LCL``'+L[``#\$.P``R3L``'-([  
M``#;.P``Y#L``.D[``#R.P``CP``'\``':/``')3P``#'\``'[/'2#P`  
M`\$T``\!2/'93P``&X``\!S/'?#P``(4``'\``'./'DSP``)P``'\E/'`  
MKCP``'+,\``'"\/``'Q3P``',X``'\#3/'W#P``.4``'\#N/'\SP``'/P``'\`%  
M/0``#CT``'!,],``'</0``'+#T``#<]``'!/0``33T``%@]``'!C/0``;CT``'L]  
M``'"'/0``A3T``')@]``'A/0``ICT``'\*\]``"X/0``P3T``',8]``#//0``V#T`  
M`.]\$]``#F/0``[ST``'/@]``'!/0``!CX``'\^``'8/@``(3X``"8``'0/@``'  
M.#X``\$A``'!&/@``3SX``'%^``!J/@``=3X``('`^``'+/@``ECX``\*\$A``"L  
M/@``MSX``'+P``^`#!/@``U#X``'-T``^`#B/@``ZSX``'/0``^`#!/@``C``'\`L\_  
M``'4/P``'3``'\``'(\_``'K/P``'-#``'\`#T``\_``'!/P``2S``'\`%0``\_``'!=/P``8C``\  
M`&L``\_``!T/P``'3\``'((``\_``'+/P``FS``'\`\*@``\_``"S/P``OC``'\`,D``\_``#4/P``'  
MWS``\_``.H``\_``#0/P``]#``\_``'=``\_``00``\_``%4``\_``!Y``\_``\_``GO``\_``\_``\$,``\_``#5``\_``\_``^  
M0``\_``1T``\_``%!.``\_``!50``\_``7D``\_``&=``\_``!P0``\_``=4``\_``\_``Y``\_``\_``"0``\_``D\$``\_``)5`  
M``\_``">0``\_``IT``\_``'+!``\_``"U0``\_``OD``\_``\_``',Y``\_``\_``#;0``\_``\_``YD``\_``\_``/%``\_``\_``#0``\_``\_``!T\$`  
M`!)!``\_``=00``\_``(D\$``\_``"=!``\_``Z00``\_``0T\$``\_``\$A!``\_``!100``\_``6D\$``\_``&-!``\_``!H00``  
M<4\$``\_``'I!``\_``'##00``\_``B\$\$\_``)%!``\_``":00``\_``HT\$``\_``\*A!``\_``"Q00``\_``ND\$``\_``',-!``\_``#(  
M00``\_``T4\$``\_``'.%!.``\_``#N00``\_``^4\$``\_``\_``'1``\_``\_``'/0@``\_``&D``\_``("5``\_``\_``J0@``\_``'+T``\_``('\$)"  
M``\_``!+0@``\_``4\$``\_``('`%E``\_``\_``!B0@``\_``\_``:T``\_``\_``\_``'!Y0@``\_``\_``@D``\_``\_``(M``\_``\_``"00@``\_``\_``F4``\_``  
M`\*)``\_``\_``"K0@``\_``\_``L\$``\_``\_``'+E``\_``\_``#`0@``\_``\_``RT``\_``\_``\_``'!``\_``\_``#90@``\_``\_``XD``\_``\_``\_``.M``\_``\_``#P0@``\_``  
M^4``\_``\_``E#``\_``\_``60P``\_``\_``(4,``\_``\_``"Q#``\_``\_``W0P``\_``\_``0D,``\_``\_``\$U#``\_``\_``!80P``\_``\_``74,``\_``\_``&)#``\_``\_``!U  
M0P``\_``?D,``\_``\_``(-#``\_``\_``",0P``\_``\_``E4,``\_``\_``)Y#``\_``\_``"C0P``\_``\_``K\$,``\_``\_``'+5#``\_``\_``"0P``\_``\_``PT,``\_``\_``',Q#  
M``\_``#50P``\_``\_``WD,``\_``\_``'.-#``\_``\_``#L0P``\_``\_``]4,``\_``\_``'/Y#``\_``\_``\_``#1``\_``\_``\_``#0``\_``\_``!5\$``\_``\_``>1``\_``\_``(T0`  
M`"Q\$``\_``\_``\1``\_``\_``1T0``\_``\_``%)\$``\_``\_``!=1``\_``\_``:0\$``\_``\_``\_``-\$``\_``\_``!^1``\_``\_``B40``\_``\_``)1\$``\_``\_``"91``\_``\_``  
MGD0``\_``\_``+\$``\_``\_``"Z1``\_``\_``OT0``\_``\_``',A\$``\_``\_``#11``\_``\_``VD0``\_``\_``-]\$``\_``\_``#H1``\_``\_``\40``\_``\_``/I\$``\_``\_``#\_  
M1``\_``\_``"\$4``\_``\_``!%``\_``\_``:10``\_``\_``'T4``\_``\_``"A%``\_``\_``\_``Q10``\_``\_``.D4``\_``\_``#]#``\_``\_``!(10``\_``\_``444``\_``\_``%I%  
M``\_``!`?10``\_``\_``:4``\_``\_``'A%``\_``\_``\_``"%10``\_``\_``D\$4``\_``\_``)M%``\_``\_``\_``"F10``\_``\_``L44``\_``\_``'+Y%``\_``\_``\_``#10``\_``\_``R\$4`  
M`-M%``\_``\_``#D10``\_``\_``Z44``\_``\_``/)%``\_``\_``\_``#10``\_``\_``!\$8``\_``\_``E&``\_``\_``21@``\_``\_``&T8``\_``\_``"1&``\_``\_``I1@`

[illegible]

M`6:"08`!9I&`@`%L`50FE<"G@2\_7@>5[!24#`4)I2!@`%F@D&`6:1@(`M!;`&4)I7`IX\$OUX!`E>P15`QP%":4@8`!9H)!@`%FD8""`6P!U":5P\*>![+]>M`1Y7L%=0,<!0FE(&`6:"08`!9I&`@`%L`E0FE<"G@2\_7@>5[!4#`4)I2M!@`%F@D&`6:1@(`!;`\*4)I7`IX\$OUX!`E>P4E`QP%":4@8`!9H)!@`%FD8"M`6P!U":5P\*>![+]>1Y7L\$50,<!0FE(&`6:Y04`!9I&`@`%OUX!`E>:Y04`M!9I&`@`%L`-0FE<"G@2\_7@>5[^S`Y7,<!0FK0&`6:Y04`!9I&`@`%OUX!M`E>\_]``.5S`4)JT!@`%FN4%`6:1@(`!;]>1Y70S0!#E<QP%":M`8`!9KEM!0`%FD8""`6\_7@>5YKE!0`%FD8""`6P#E":5P\*>![+]>1Y70U@!#E<QP%":MM`8`!9KE!0`%FD8""`6\_7@>5[^`0Y7,<!0FK0&`6:Y04`!9I&`@`%OUX!M`E>\_LP\$.5S`4)JT!@`%FN4%`6:1@(`!;]>1Y7FN4%`6:1@(`!;`#4)I7M`IX\$OUX!`E>\_XP\$.5S`4)JT!@`%FN4%`6:1@(`!;]>1Y7OR4"#E<QP%":MM`8`!9KE!0`%FD8""`6\_7@>5[]D`@Y7,<!0FK0&`6:Y04`!9I&`@`%OUX!M`E>\_I0(.5S`4)JT!@`%FN4%`6:1@(`!;]>1Y70^4"#E<QP%":M`8`!9KEM!0`%FD8""`6\_7@>5[\K`PY7,<!0FK0&`6:Y04`!9I&`@`%OUX!`E>\_@, .M5S`4)JT!@`%FN4%`6:1@(`!;]>1Y7FN4%`6:1@(`!;]>1Y7OX\$#E<QMP%":M`8`!9KE!0`%FD8""`6\_7@>5YKE!0`%FD8""`6\_7@>5YKE!0`%FD8"M`6PCE":5P\*>![+]>1Y70[,##E<QP%":M`8`!9H)!@`%FD8""`6P#E":5P\*>M!+]>1Y70[T##E<QP%":M`8`!9H)!@`%FD8""`6PCE":5P\*>![+]>1Y70]<#M#E<QP%":M`8`!9KE!0`%FD8""`6:AP\*>!`C`=/>P#E":5P\*>!)K`9X\$OUX!M`E>\_V@, .5S`4)JT!@`%FN4%`6:1@(`!;]>1Y7FN4%`6:1@(`!;]>1Y7MOPH\$#E<QP%":M`8`!9KE!0`%FD8""`6\_7@>5[\\_!`Y7,<!0FK0&`6:Y04`M!9I&`@`%OUX!`E>:Y04`!9I&`@`%F@T#G@2B2`"/D@`070#Z7T`OUX!`E>PM05`QP%":4@8`!;`@4#`4)I2!@`%L/E0,<!0FE(&`6\_@0.5S`4)JT!@`%MF@D&`6:1@(`!;CN`E":QP\*>![+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"M4)K`IX\$N,(!4)J<`IX\$F00"G@2XP@%0FIP"G@2`/D@`870#Z7T`N.X"4)K`M`IX\$N)8`4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@]0FL<"G@2XP@%0FIP"G@2:M]`\*>![+C`5":G`\*>![+]>1Y7L&%0,<!0FE(&`6P(%`QP%":4@8`!;#Y4#`4)M4)I2!@`%OVX\$#E<QP%":M`8`!9H)!@`%FD8""`6`/D@`0G0#Z=,`OUX!`E>PM0E`QP%":4@8`!;]Q!`Y7,<!0FK0&`6P^5`QP%":4@8`!;#Y4#`4)I2!@`%ML/E0,<!0FE(&`6P(%`QP%":4@8`!9H)!@`%FD8""`6X[@]0FL<"G@2XP@%0MFIP"G@2:]`\*>![+B6`%":G`\*>![+CN`E":QP\*>![+B6`%":G`\*>!)KT`IX\$N)8`M4)J<`IX\$N.X"4)K`IX\$N)8`4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@]0FL<"MG@2XE@!0FIP"G@2:]`\*>![+C`5":G`\*>!(`^2`!B=`/ITP"X[@]0FL<"G@2XMP@%0FIP"G@2:]`\*>![+B6`%":G`\*>![+CN`E":QP\*>![+B6`%":G`\*>!)KT`IX\$MN)8`4)J<`IX\$N.X"4)K`IX\$N)8`4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@]0MFL<"G@2XE@!0FIP"G@2:]`\*>![+C`5":G`\*>![+]>1Y7L&)0,<!0FE(&`6\_M<00.5S`4)JT!@`%L/E0,<!0FE(&`6P^5`QP%":4@8`!;#Y4#`4)I2!@`%ML"!0,<!0FE(&`6:"08`!9I&`@`%@#Y(`\$-T`^G3`+]>1Y7L\$-0,<!0FE(&M`6\_<00.5S`4)JT!@`%L/E0,<!0FE(&`6P+5`QP%":4@8`!;#Y4#`4)I2M!@`%L"!0,<!0FE(&`6:"08`!9I&`@`%N.X"4)K`IX\$N,(!4)J<`IX\$F00"MG@2XE@!0FIP"G@2X[@]0FL<"G@2XE@!0FIP"G@2:]`\*>![+B6`%":G`\*>![+CNM`E":QP\*>![+C`5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`IX\$N)8`4)J<M`IX\$F00"G@2XP@%0FIP"G@2`/D@`8W0#Z=,`N.X"4)K`IX\$N,(!4)J<`IX\$MF00"G@2XE@!0FIP"G@2X[@]0FL<"G@2XE@!0FIP"G@2:]`\*>![+B6`%":G`\*>M!+CN`E":QP\*>![+C`5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`IX\$N)8`M4)J<`IX\$F00"G@2XP@%0FIP"G@2\_7@>5[!C4#`4)I2!@`%OW\$\$#E<QP%":MM`8`!;#Y4#`4)I2!@`%L"U0,<!0FE(&`6P^5`QP%":4@8`!;`@4#`4)I2M!@`%F@D&`6:1@(`!8`^2`!\$=`/IJ`"\_7@>5[!\$4#`4)I2!@`%OW\$\$#E<Q

MP%" :M`8`! ;#Y4#`'4)I2!@`%L/E0,<!0FE(&`6P(%`QP%" :408`!9H)!@`%  
MFD8"``6X[(@)0FL<"G@2XP@%0FIP"G@2:]`\*>+B6`%":G`\*>+CN`E":QP\*>  
M!+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`IX\$N)8`4)J<`IX\$F00"  
MG@2XP@%0FIP"G@2`/D@`9`0#Z:@`N.X"4)K`IX\$N,(!4)J<`IX\$F00"G@2X  
ME@!0FIP"G@2X[(@)0FL<"G@2XE@!0FIP"G@2:]`\*>+B6`%":G`\*>+CN`E":  
MQP\*>+B6`%":G`\*>!)KT`IX\$N,(!4)J<`IX\$OUX!'E>P9`QP%" :408`! ;]Q  
M!`Y7,<!0FK0&`6P^5`QP%" :408`! ;#Y4#`'4)I2!@`%L"!0,<!0FE(&`6:  
M"08`!9I&`@`%#Y(`\$5U6[>`1Y7L\$50,<!0FE(&`6P(%`QP%" :408`! ;#Y  
M4#`'4)I2!@`%L"!0,<!0FE(&`6:"08`!9I&`@`%N.X"4)K`IX\$N)8`4)J<  
M`IX\$F00"G@2XP@%0FIP"G@2`/D@`975;N.X"4)K`IX\$N)8`4)J<`IX\$F00"  
MG@2XP@%0FIP"G@2\_7@>5[!E4#`'4)I2!@`%L"!0,<!0FE(&`6P^5`QP%" :  
M408`! ;`@4#`'4)I2!@`%F@D&`6:1@(`!8`^2`!&="/IW`"\_7@>5[!&4#`'  
M4)I2!@`%L"!0,<!0FE(&`6P^5`QP%" :408`! ;#Y4#`'4)I2!@`%L"U0,<!0  
MFE(&`6P^5`QP%" :408`! ;`@4#`'4)I2!@`%F@D&`6:1@(`! ;CN`E":QP\*>  
M!+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`IX\$N)8`4)J<`IX\$F00"  
MG@2XE@!0FIP"G@2X[(@)0FL<"G@2XP@%0FIP"G@2:]`\*>+B6`%":G`\*>+CN  
M`E":QP\*>+B6`%":G`\*>!)KT`IX\$N,(!4)J<`IX\$@#Y(`&9T`^G<+CN`E":  
MQP\*>+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`IX\$N)8`4)J<`IX\$  
MF00"G@2XE@!0FIP"G@2X[(@)0FL<"G@2XP@%0FIP"G@2:]`\*>+B6`%":G`\*>  
M!+CN`E":QP\*>+B6`%":G`\*>!)KT`IX\$N,(!4)J<`IX\$OUX!'E>P9E`QP%" :  
M408`! ;`@4#`'4)I2!@`%L/E0,<!0FE(&`6P^5`QP%" :408`! ;`M4#`'4)I2  
M!@`%L/E0,<!0FE(&`6P(%`QP%" :408`!9H)!@`%FD8"``6`/D@`1W0#Z:@`  
MOUX!'E>P1U`QP%" :408`! ;]Q!`Y7,<!0FK0&`6P+5`QP%" :408`! ;#Y4#`'  
M4)I2!@`%L"!0,<!0FE(&`6:"08`!9I&`@`%N.X"4)K`IX\$N,(!4)J<`IX\$  
MF00"G@2XE@!0FIP"G@2X[(@)0FL<"G@2XP@%0FIP"G@2:]`\*>+B6`%":G`\*>  
M!+CN`E":QP\*>+B6`%":G`\*>!)KT`IX\$N,(!4)J<`IX\$@#Y(`&=T`^FH+CN  
M`E":QP\*>+C`5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`IX\$N,(!4)J<  
M`IX\$F00"G@2XE@!0FIP"G@2X[(@)0FL<"G@2XE@!0FIP"G@2:]`\*>+C`5":  
MG`\*>+!>`1Y7L&=0,<!0FE(&`6\_<00.5S`'4)JT!@`%L"U0,<!0FE(&`6P  
M^5`QP%" :408`! ;`@4#`'4)I2!@`%F@D&`6:1@(`!8`^2`!(="/IW`"\_7@>  
M5[! (4#`'4)I2!@`%L"!0,<!0FE(&`6P^5`QP%" :408`! ;#Y4#`'4)I2!@`%  
ML/E0,<!0FE(&`6P^5`QP%" :408`! ;`@4#`'4)I2!@`%F@D&`6:1@(`! ;CN  
M`E":QP\*>+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`IX\$N)8`4)J<  
M`IX\$F00"G@2XE@!0FIP"G@2X[(@)0FL<"G@2XE@!0FIP"G@2:]`\*>+B6`%":  
MG`\*>+CN`E":QP\*>+B6`%":G`\*>!)KT`IX\$N,(!4)J<`IX\$@#Y(`&AT`^G<  
M`+CN`E":QP\*>+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`IX\$N)8`  
M4)J<`IX\$F00"G@2XE@!0FIP"G@2X[(@)0FL<"G@2XE@!0FIP"G@2:]`\*>+B6  
M`%":G`\*>+CN`E":QP\*>+B6`%":G`\*>!)KT`IX\$N,(!4)J<`IX\$OUX!'E>P  
M:%`QP%" :408`! ;`@4#`'4)I2!@`%L/E0,<!0FE(&`6P^5`QP%" :408`! ;#Y  
M4#`'4)I2!@`%L/E0,<!0FE(&`6P(%`QP%" :408`!9H)!@`%FD8"``6`/D@`  
M270#Z88`OUX!'E>P25`QP%" :408`! ;`@4#`'4)I2!@`%L/E0,<!0FE(&`6P  
M^5`QP%" :408`! ;`@4#`'4)I2!@`%F@D&`6:1@(`! ;CN`E":QP\*>+B6`%":  
MG`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`IX\$N)8`4)J<`IX\$F00"G@2XP@%0  
MFIP"G@2`/D@`70#Z88`N.X"4)K`IX\$N)8`4)J<`IX\$F00"G@2XE@!0FIP"  
MG@2X[(@)0FL<"G@2XE@!0FIP"G@2:]`\*>+C`5":G`\*>+!>`1Y7L&E0,<!0  
MFE(&`6P(%`QP%" :408`! ;#Y4#`'4)I2!@`%L/E0,<!0FE(&`6P(%`QP%" :  
M408`!9H)!@`%FD8"``6`/D@`2G0#Z=,`OUX!'E>P2E`QP%" :408`! ;`@4#`'  
M4)I2!@`%L/E0,<!0FE(&`6P+5`QP%" :408`! ;`M4#`'4)I2!@`%OVX\$#E<Q

MP%":M`8`!9H)!@`%FD8""`6X[@]0FL<"G@2XE@!0FIP"G@2:]`\*>+B6`%":  
MG`\*>+CN`E":QP\*>+C""5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K'`IX\$  
MN,(!4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@]0FL<"G@2XP@%0FIP"G@2:]`\*>  
M!+C""5":G`\*>!(`^2`!J=`/ITP"X[@]0FL<"G@2XE@!0FIP"G@2:]`\*>+B6  
M`%":G`\*>+CN`E":QP\*>+C""5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K'  
M`IX\$N,(!4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@]0FL<"G@2XP@%0FIP"G@2:  
M]`\*>+C""5":G`\*>+!>`1Y7L&I0,<!0FE(&`6P(%`QP%":4@8`!;#Y4#`'  
M4)I2!@`%L"U0,<!0FE(&`6P+5`QP%":4@8`!;]N!`Y7,<!0FK0&`6:"08`  
M!9I&`@`%@#Y(`\$MT`^F?`+]>`1Y7L\$M0,<!0FE(&`6\_<00.5S`4)JT!@`%  
ML/E0,<!0FE(&`6\_;<00.5S`4)JT!@`%F@D&`6:1@(`!;CN`E":QP\*>+C"  
M`5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K'`IX\$N)8`4)J<`IX\$F00"G@2X  
ME@!0FIP"G@2X[@]0FL<"G@2XP@%0FIP"G@2:]`\*>+C""5":G`\*>!(`^2`!K  
M=`/IGP"X[@]0FL<"G@2XP@%0FIP"G@2:]`\*>+B6`%":G`\*>+CN`E":QP\*>  
M!+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K'`IX\$N,(!4)J<`IX\$F00"  
MG@2XP@%0FIP"G@2\_7@>5[!K4#`4)I2!@`%OW\$#\$E<QP%":M`8`!;#Y4#`'  
M4)I2!@`%OVX\$#\$E<QP%":M`8`!9H)!@`%FD8""`6`/D@`3'0#Z=P`OUX!`E>P  
M3%`QP%":4@8`!;`@4#`4)I2!@`%L/E0,<!0FE(&`6P+5`QP%":4@8`!;#Y  
M4#`4)I2!@`%L/E0,<!0FE(&`6P(%`QP%":4@8`!9H)!@`%FD8""`6X[@]0  
MFL<"G@2XE@!0FIP"G@2:]`\*>+B6`%":G`\*>+CN`E":QP\*>+C""5":G`\*>  
M!)KT`IX\$N)8`4)J<`IX\$N.X"4)K'`IX\$N)8`4)J<`IX\$F00"G@2XE@!0FIP"  
MG@2X[@]0FL<"G@2XE@!0FIP"G@2:]`\*>+C""5":G`\*>!(`^2`!L=`/IW`"X  
M[@]0FL<"G@2XE@!0FIP"G@2:]`\*>+B6`%":G`\*>+CN`E":QP\*>+C""5":  
MG`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K'`IX\$N)8`4)J<`IX\$F00"G@2XE@!0  
MFIP"G@2X[@]0FL<"G@2XE@!0FIP"G@2:]`\*>+C""5":G`\*>+!>`1Y7L&Q0  
M,<!0FE(&`6P(%`QP%":4@8`!;#Y4#`4)I2!@`%L"U0,<!0FE(&`6P^5`Q  
MP%":4@8`!;#Y4#`4)I2!@`%L"!0,<!0FE(&`6:"08`!9I&`@`%@#Y(`\$UU  
M=+]>`1Y7L\$U0,<!0FE(&`6\_<00.5S`4)JT!@`%OVX\$#\$E<QP%":M`8`!9H)  
M!@`%FD8""`6X[@]0FL<"G@2XP@%0FIP"G@2:]`\*>+B6`%":G`\*>+CN`E":  
MQP\*>+C""5":G`\*>!)KT`IX\$N,(!4)J<`IX\$@#Y(`&UU=+CN`E":QP\*>+C"  
M`5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K'`IX\$N,(!4)J<`IX\$F00"G@2X  
MP@%0FIP"G@2\_7@>5[!M4#`4)I2!@`%OW\$#\$E<QP%":M`8`!;]N!`Y7,<!0  
MFK0&`6:"08`!9I&`@`%@#Y(`\$YT`^E]`+]>`1Y7L\$Y0,<!0FE(&`6\_<00.  
M5S`4)JT!@`%L/E0,<!0FE(&`6P(%`QP%":4@8`!9H)!@`%FD8""`6X[@]0  
MFL<"G@2XP@%0FIP"G@2:]`\*>+B6`%":G`\*>+CN`E":QP\*>+B6`%":G`\*>  
M!)KT`IX\$N,(!4)J<`IX\$@#Y(`&YT`^E]`+CN`E":QP\*>+C""5":G`\*>!)KT  
M`IX\$N)8`4)J<`IX\$N.X"4)K'`IX\$N)8`4)J<`IX\$F00"G@2XP@%0FIP"G@2\_  
M7@>5[!N4#`4)I2!@`%OW\$#\$E<QP%":M`8`!;#Y4#`4)I2!@`%L"!0,<!0  
MFE(&`6:"08`!9I&`@`%@#Y(`\$J]T`^F?`+]>`1Y7L\$]0,<!0FE(&`6\_<00.  
M5S`4)JT!@`%L"U0,<!0FE(&`6\_;<00.5S`4)JT!@`%F@D&`6:1@(`!;CN  
M`E":QP\*>+C""5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K'`IX\$N,(!4)J<  
M`IX\$F00"G@2XE@!0FIP"G@2X[@]0FL<"G@2XP@%0FIP"G@2:]`\*>+C""5":  
MG`\*>!(`^2`!0=`/IGP"X[@]0FL<"G@2XP@%0FIP"G@2:]`\*>+B6`%":G`\*>  
M!+CN`E":QP\*>+C""5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K'`IX\$N,(!  
M4)J<`IX\$F00"G@2XP@%0FIP"G@2\_7@>5[!04#`4)I2!@`%OW\$#\$E<QP%":  
MM`8`!;`M4#`4)I2!@`%OVX\$#\$E<QP%":M`8`!9H)!@`%FD8""`6`/D@`4'0#  
MZ=P`OUX!`E>P4%`QP%":4@8`!;`@4#`4)I2!@`%L/E0,<!0FE(&`6P+5`Q  
MP%":4@8`!;`M4#`4)I2!@`%L/E0,<!0FE(&`6P(%`QP%":4@8`!9H)!@`%  
MFD8""`6X[@]0FL<"G@2XE@!0FIP"G@2:]`\*>+B6`%":G`\*>+CN`E":QP\*>

M!+C" `5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K'`IX\$N,(!4)J<`IX\$F00"  
MG@2XE@!0FIP"G@2X[@]0FL<"G@2XE@!0FIP"G@2:]`\*>!+C" `5":G`\*>!(`^  
M2`!P= `/IW"X[@]0FL<"G@2XE@!0FIP"G@2:]`\*>!+B6`%":G`\*>!+CN`E":  
MQP\*>!+C" `5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K'`IX\$N,(!4)J<`IX\$  
MF00"G@2XE@!0FIP"G@2X[@]0FL<"G@2XE@!0FIP"G@2:]`\*>!+C" `5":G`\*>  
M!+]>`1Y7L`!0,<!0FE(&` `6P(%`QP%":4@8`!;#Y4#`'`4)I2!@`%L"U0,<!0  
MFE(&` `6P+5`QP%":4@8`!;#Y4#`'`4)I2!@`%L"!0,<!0FE(&` `6:"08`!9I&  
M`@`%@#Y(`%T`^G\*`+]>`1Y7L%%0,<!0FE(&` `6\_<00.5S`'`4)JT!@`%L"U0  
M,<!0FE(&` `6P^5`QP%":4@8`!;]N!`Y7,<!0FK0&` `6:"08`!9I&`@`%N.X"  
M4)K'`IX\$N,(!4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@]0FL<"G@2XP@%0FIP"  
MG@2:]`\*>!+B6`%":G`\*>!+CN`E":QP\*>!+B6`%":G`\*>!)KT`IX\$N)8`4)J<  
M`IX\$N.X"4)K'`IX\$N,(!4)J<`IX\$F00"G@2XP@%0FIP"G@2`/D@`<70#Z<H`  
MN.X"4)K'`IX\$N,(!4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@]0FL<"G@2XP@%0  
MFIP"G@2:]`\*>!+B6`%":G`\*>!+CN`E":QP\*>!+B6`%":G`\*>!)KT`IX\$N)8`  
M4)J<`IX\$N.X"4)K'`IX\$N,(!4)J<`IX\$F00"G@2XP@%0FIP"G@2\_7@>\$5[!Q  
M4#`'`4)I2!@`%OW\$#\$E<QP%":M`8`!;`M4#`'`4)I2!@`%L/E0,<!0FE(&` `6\_  
M;@0.5S`'`4)JT!@`%F@D&` `6:1@(`!8`^2`!2= `/ILO"\_7@>\$5[!24#`'`4)I2  
M!@`%L"!0,<!0FE(&` `6P^5`QP%":4@8`!;`M4#`'`4)I2!@`%L/E0,<!0FE(&  
M` `6P(%`QP%":4@8`!9H)!@`%FD8""`6X[@]0FL<"G@2XE@!0FIP"G@2:]`\*>  
M!+B6`%":G`\*>!+CN`E":QP\*>!+C" `5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"  
M4)K'`IX\$N)8`4)J<`IX\$F00"G@2XP@%0FIP"G@2`/D@`<G0#Z;\$`N.X"4)K'  
M`IX\$N)8`4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@]0FL<"G@2XP@%0FIP"G@2:  
M]`\*>!+B6`%":G`\*>!+CN`E":QP\*>!+B6`%":G`\*>!)KT`IX\$N,(!4)J<`IX\$  
MOUX!`E>P<E`QP%":4@8`!;`@4#`'`4)I2!@`%L/E0,<!0FE(&` `6P+5`QP%":  
M4@8`!;#Y4#`'`4)I2!@`%L"!0,<!0FE(&` `6:"08`!9I&`@`%@#Y(`%-T`^FQ  
M`+]>`1Y7L%-0,<!0FE(&` `6P(%`QP%":4@8`!;#Y4#`'`4)I2!@`%L/E0,<!0  
MFE(&` `6P^5`QP%":4@8`!;`@4#`'`4)I2!@`%F@D&` `6:1@(`!;CN`E":QP\*>  
M!+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K'`IX\$N)8`4)J<`IX\$F00"  
MG@2XE@!0FIP"G@2X[@]0FL<"G@2XE@!0FIP"G@2:]`\*>!+C" `5":G`\*>!(`^  
M2`!S= `/ILO"X[@]0FL<"G@2XE@!0FIP"G@2:]`\*>!+B6`%":G`\*>!+CN`E":  
MQP\*>!+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K'`IX\$N)8`4)J<`IX\$  
MF00"G@2XP@%0FIP"G@2\_7@>\$5[!S4#`'`4)I2!@`%L"!0,<!0FE(&` `6P^5`Q  
MP%":4@8`!;#Y4#`'`4)I2!@`%L/E0,<!0FE(&` `6P(%`QP%":4@8`!9H)!@`%  
MFD8""`6`/D@`5`5;OUX!`E>P5`QP%":4@8`!;`@4#`'`4)I2!@`%L"U0,<!0  
MFE(&` `6P(%`QP%":4@8`!9H)!@`%FD8""`6X[@]0FL<"G@2XP@%0FIP"G@2:  
M]`\*>!+C" `5":G`\*>!(`^2`!T=5NX[@]0FL<"G@2XP@%0FIP"G@2:]`\*>!+C"  
M`5":G`\*>!+]>`1Y7L`!0,<!0FE(&` `6P(%`QP%":4@8`!;`M4#`'`4)I2!@`%  
ML"!0,<!0FE(&` `6:"08`!9I&`@`%@#Y(`%5T`^FQ`+]>`1Y7L%50,<!0FE(&  
M` `6P(%`QP%":4@8`!;#Y4#`'`4)I2!@`%L/E0,<!0FE(&` `6P+5`QP%":4@8`  
M!;`@4#`'`4)I2!@`%F@D&` `6:1@(`!;CN`E":QP\*>!+B6`%":G`\*>!)KT`IX\$  
MN)8`4)J<`IX\$N.X"4)K'`IX\$N)8`4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@]0  
MFL<"G@2XP@%0FIP"G@2:]`\*>!+C" `5":G`\*>!(`^2`!U= `/ILO"X[@]0FL<"  
MG@2XE@!0FIP"G@2:]`\*>!+B6`%":G`\*>!+CN`E":QP\*>!+B6`%":G`\*>!)KT  
M`IX\$N)8`4)J<`IX\$N.X"4)K'`IX\$N,(!4)J<`IX\$F00"G@2XP@%0FIP"G@2\_  
M7@>\$5[!U4#`'`4)I2!@`%L"!0,<!0FE(&` `6P^5`QP%":4@8`!;#Y4#`'`4)I2  
M!@`%L"U0,<!0FE(&` `6P(%`QP%":4@8`!9H)!@`%FD8""`6`/D@`5G0#Z=P`  
MOUX!`E>P5E`QP%":4@8`!;`@4#`'`4)I2!@`%L/E0,<!0FE(&` `6P^5`QP%":  
M4@8`!;#Y4#`'`4)I2!@`%L"U0,<!0FE(&` `6P(%`QP%":4@8`!9H)!@`%FD8"

M` `6X[@]0FL<"G@2XE@!0FIP"G@2:]`\*>+B6`%":G`\*>+CN`E":QP\*>+B6  
M`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K` `IX\$N)8`4)J<`IX\$F00"G@2X  
ME@!0FIP"G@2X[@]0FL<"G@2XP@%0FIP"G@2:]`\*>+C` `5":G`\*>!(`^2`!V  
M=`/IW`"X[@]0FL<"G@2XE@!0FIP"G@2:]`\*>+B6`%":G`\*>+CN`E":QP\*>  
M!+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K` `IX\$N)8`4)J<`IX\$F00"  
MG@2XE@!0FIP"G@2X[@]0FL<"G@2XP@%0FIP"G@2:]`\*>+C` `5":G`\*>+!]>  
M`1Y7L`90,<!0FE(&` `6P(%`QP%":4@8`!;#Y4#` `4)I2!@`%L/E0,<!0FE(&  
M` `6P^5`QP%":4@8`!;`M4#` `4)I2!@`%L"!0,<!0FE(&` `6:"08`!9I&`@`%  
M@#Y(`%=T`^FQ`+)]>`1Y7L%=0,<!0FE(&` `6P(%`QP%":4@8`!;#Y4#` `4)I2  
M!@`%L"U0,<!0FE(&` `6P+5`QP%":4@8`!;`@4#` `4)I2!@`%F@D&` `6:1@(`  
M!;CN`E":QP\*>+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K` `IX\$N,(!  
M4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@]0FL<"G@2XP@%0FIP"G@2:]`\*>+C`  
M`5":G`\*>!(`^2`!W=`/ILO"X[@]0FL<"G@2XE@!0FIP"G@2:]`\*>+B6`%":  
MG`\*>+CN`E":QP\*>+C` `5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K` `IX\$  
MN,(!4)J<`IX\$F00"G@2XP@%0FIP"G@2\_7@>\$5[!W4#` `4)I2!@`%L"!0,<!0  
MFE(&` `6P^5`QP%":4@8`!;`M4#` `4)I2!@`%L"U0,<!0FE(&` `6P(%`QP%":  
M4@8`!9H)!@`%FD8"``6`/D@` `6`0#Z=,`OUX!`E>P6%`QP%":4@8`!;]Q!`Y7  
M,<!0FK0&` `6P^5`QP%":4@8`!;#Y4#` `4)I2!@`%L"U0,<!0FE(&` `6P(%`Q  
MP%":4@8`!9H)!@`%FD8"``6X[@]0FL<"G@2XP@%0FIP"G@2:]`\*>+B6`%":  
MG`\*>+CN`E":QP\*>+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K` `IX\$  
MN)8`4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@]0FL<"G@2XP@%0FIP"G@2:]`\*>  
M!+C` `5":G`\*>!(`^2`!X=`/ITP"X[@]0FL<"G@2XP@%0FIP"G@2:]`\*>+B6  
M`%":G`\*>+CN`E":QP\*>+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`  
M`IX\$N)8`4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@]0FL<"G@2XP@%0FIP"G@2:  
M]`\*>+C` `5":G`\*>+!]>`1Y7L`A0,<!0FE(&` `6<00.5S` `4)JT!@`%L/E0  
M,<!0FE(&` `6P^5`QP%":4@8`!;`M4#` `4)I2!@`%L"!0,<!0FE(&` `6:"08`  
M!9I&`@`%@#Y(`%ET`^G3`+)]>`1Y7L`E0,<!0FE(&` `6<00.5S` `4)JT!@`%  
ML/E0,<!0FE(&` `6P+5`QP%":4@8`!;`M4#` `4)I2!@`%L"!0,<!0FE(&` `6:  
M"08`!9I&`@`%N.X"4)K` `IX\$N,(!4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@]0  
MFL<"G@2XE@!0FIP"G@2:]`\*>+B6`%":G`\*>+CN`E":QP\*>+C` `5":G`\*>  
M!)KT`IX\$N)8`4)J<`IX\$N.X"4)K` `IX\$N,(!4)J<`IX\$F00"G@2XP@%0FIP"  
MG@2`/D@`>70#Z<H`N.X"4)K` `IX\$N,(!4)J<`IX\$F00"G@2XE@!0FIP"G@2X  
M[@]0FL<"G@2XE@!0FIP"G@2:]`\*>+B6`%":G`\*>+CN`E":QP\*>+C` `5":  
MG`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K` `IX\$N,(!4)J<`IX\$F00"G@2XP@%0  
MFIP"G@2\_7@>\$5[!Y4#` `4)I2!@`%OW\$#\$E<QP%":M`8`!;#Y4#` `4)I2!@`%  
ML"U0,<!0FE(&` `6\_@0.5S` `4)JT!@`%F@D&` `6:1@(`!8`^2`!:=`/ITP`\_  
M7@>\$5[!4#` `4)I2!@`%OW\$#\$E<QP%":M`8`!;`M4#` `4)I2!@`%L/E0,<!0  
MFE(&` `6P^5`QP%":4@8`!;`@4#` `4)I2!@`%F@D&` `6:1@(`!;CN`E":QP\*>  
M!+C` `5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K` `IX\$N,(!4)J<`IX\$F00"  
MG@2XE@!0FIP"G@2X[@]0FL<"G@2XE@!0FIP"G@2:]`\*>+B6`%":G`\*>+CN  
M`E":QP\*>+B6`%":G`\*>!)KT`IX\$N,(!4)J<`IX\$@#Y(` `IT`^G3`+CN`E":  
MQP\*>+C` `5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K` `IX\$N,(!4)J<`IX\$  
MF00"G@2XE@!0FIP"G@2X[@]0FL<"G@2XE@!0FIP"G@2:]`\*>+B6`%":G`\*>  
M!+CN`E":QP\*>+B6`%":G`\*>!)KT`IX\$N,(!4)J<`IX\$OUX!`E>P>E`QP%":  
M4@8`!;]Q!`Y7,<!0FK0&` `6P+5`QP%":4@8`!;#Y4#` `4)I2!@`%L/E0,<!0  
MFE(&` `6P(%`QP%":4@8`!9H)!@`%FD8"``6`/D@`(`4EN,(!4)J<`IX\$OUX!  
M`E>\_=`0.5S` `4)JT!@`%F@D&` `6:1@(`!8`^2` ``=1BXP@%0FIP"G@2\_7@>  
M5YKE!0`%FD8"``6`/D@`"74EN,(!4)J<`IX\$OUX!`E>\_@0.5S` `4)JT!@`%

MF@D&``6:1@(`!8`^2`P= `/I)\_7@>5[ `P4#`' `4)I2!@`%OW\$\$#E<QP%":  
MM`8`!; `M4#`' `4)I2!@`%L"U0,<!0FE(&`6P+5`QP%":4@8`!;]N!`Y7,<!0  
MFK0&`6:"08`!9I&`@`%N.X"4)K'`IX\$N,(!4)J<`IX\$F00"G@2XE@!0FIP"  
MG@2X[@)0FL<"G@2XP@%0FIP"G@2:]`\*>!+B6`%":G`\*>!+CN`E":QP\*>!+C"  
M`5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K'`IX\$N,(!4)J<`IX\$F00"G@2X  
ME@!0FIP"G@2X[@)0FL<"G@2XP@%0FIP"G@2:]`\*>!+C``5":G`\*>!(`^2`Q  
M= `/I\_@`\_7@>5[ `Q4#`' `4)I2!@`%L"!0,<!0FE(&`6P^5`QP%":4@8`!;`M  
M4#`' `4)I2!@`%L"U0,<!0FE(&`6P+5`QP%":4@8`!;]N!`Y7,<!0FK0&`6:  
M"08`!9I&`@`%N.X"4)K'`IX\$N)8`4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@)0  
MFL<"G@2XP@%0FIP"G@2:]`\*>!+B6`%":G`\*>!+CN`E":QP\*>!+C``5":G`\*>  
M!)KT`IX\$N)8`4)J<`IX\$N.X"4)K'`IX\$N,(!4)J<`IX\$F00"G@2XE@!0FIP"  
MG@2X[@)0FL<"G@2XP@%0FIP"G@2:]`\*>!+C``5":G`\*>!(`^2`R= `/I\_@`\_7  
M7@>5[ `R4#`' `4)I2!@`%L"!0,<!0FE(&`6P^5`QP%":4@8`!;#Y4#`' `4)I2  
M!@`%L"U0,<!0FE(&`6P+5`QP%":4@8`!;]N!`Y7,<!0FK0&`6:"08`!9I&  
M`@`%N.X"4)K'`IX\$N)8`4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@)0FL<"G@2X  
ME@!0FIP"G@2:]`\*>!+B6`%":G`\*>!+CN`E":QP\*>!+C``5":G`\*>!)KT`IX\$  
MN)8`4)J<`IX\$N.X"4)K'`IX\$N,(!4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@)0  
MFL<"G@2XP@%0FIP"G@2:]`\*>!+C``5":G`\*>!(`^2`S= `/I\_@`\_7@>5[ `S  
M4#`' `4)I2!@`%L"!0,<!0FE(&`6P^5`QP%":4@8`!;#Y4#`' `4)I2!@`%L/E0  
M,<!0FE(&`6P+5`QP%":4@8`!;]N!`Y7,<!0FK0&`6:"08`!9I&`@`%N.X"  
M4)K'`IX\$N)8`4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@)0FL<"G@2XE@!0FIP"  
MG@2:]`\*>!+B6`%":G`\*>!+CN`E":QP\*>!+B6`%":G`\*>!)KT`IX\$N)8`4)J<  
M`IX\$N.X"4)K'`IX\$N,(!4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@)0FL<"G@2X  
MP@%0FIP"G@2:]`\*>!+C``5":G`\*>!(`^2`T= `/I\_@`\_7@>5[ `T4#`' `4)I2  
M!@`%L"!0,<!0FE(&`6P^5`QP%":4@8`!;#Y4#`' `4)I2!@`%L/E0,<!0FE(&  
M`6P^5`QP%":4@8`!;]N!`Y7,<!0FK0&`6:"08`!9I&`@`%N.X"4)K'`IX\$  
MN)8`4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@)0FL<"G@2XE@!0FIP"G@2:]`\*>  
M!+B6`%":G`\*>!+CN`E":QP\*>!+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"  
M4)K'`IX\$N)8`4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@)0FL<"G@2XP@%0FIP"  
MG@2:]`\*>!+C``5":G`\*>!(`^2`U= `/I!P&\_7@>5[ `U4#`' `4)I2!@`%L"!0  
M,<!0FE(&`6P^5`QP%":4@8`!;#Y4#`' `4)I2!@`%L/E0,<!0FE(&`6P^5`Q  
MP%":4@8`!;#Y4#`' `4)I2!@`%L"!0,<!0FE(&`6:"08`!9I&`@`%N.X"4)K'  
M`IX\$N)8`4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@)0FL<"G@2XE@!0FIP"G@2:  
M]`\*>!+B6`%":G`\*>!+CN`E":QP\*>!+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$  
MN.X"4)K'`IX\$N)8`4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@)0FL<"G@2XE@!0  
MFIP"G@2:]`\*>!+C``5":G`\*>!(`^2`V= `/I\_@`\_7@>5[ `V4#`' `4)I2!@`%  
MOW\$\$#E<QP%":M`8`!;#Y4#`' `4)I2!@`%L/E0,<!0FE(&`6P^5`QP%":4@8`  
M!;#Y4#`' `4)I2!@`%L"!0,<!0FE(&`6:"08`!9I&`@`%N.X"4)K'`IX\$N,(!  
M4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@)0FL<"G@2XE@!0FIP"G@2:]`\*>!+B6  
M`%":G`\*>!+CN`E":QP\*>!+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K'  
M`IX\$N)8`4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@)0FL<"G@2XE@!0FIP"G@2:  
M]`\*>!+C``5":G`\*>!(`^2`W= `/I\_@`\_7@>5[ `W4#`' `4)I2!@`%OW\$\$#E<Q  
MP%":M`8`!;`M4#`' `4)I2!@`%L/E0,<!0FE(&`6P^5`QP%":4@8`!;#Y4#`'  
M4)I2!@`%L"!0,<!0FE(&`6:"08`!9I&`@`%N.X"4)K'`IX\$N,(!4)J<`IX\$  
MFO0"G@2XE@!0FIP"G@2X[@)0FL<"G@2XP@%0FIP"G@2:]`\*>!+B6`%":G`\*>  
M!+CN`E":QP\*>!+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K'`IX\$N)8`  
M4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@)0FL<"G@2XE@!0FIP"G@2:]`\*>!+C"  
M`5":G`\*>!(`^2`X= `/I\_@`\_7@>5[ `X4#`' `4)I2!@`%OW\$\$#E<QP%":M`8`



M!;`M4#`'4)I2!@`%L"U0,<!0FE(&`6P^5`QP%":408`!;#Y4#`'4)I2!@`%  
ML"!0,<!0FE(&`6:"08`!9I&`@`%N.X"4)K`'IX\$N,(!4)J<`IX\$F00"G02X  
ME@!0FIP"G02X[@]0FL<"G02XP@%0FIP"G02:]`\*>!+B6`%":G`\*>!+CN`E":  
MQP\*>!+C`"5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`'IX\$N)8`4)J<`IX\$  
MF00"G02XE@!0FIP"G02X[@]0FL<"G02XE@!0FIP"G02:]`\*>!+C`"5":G`\*>  
M!(`^2`Y=`/I\_@\_7@>5[`Y4#`'4)I2!@`%OW\$\$#E<QP%":M`8`!;`M4#`'  
M4)I2!@`%L"U0,<!0FE(&`6P+5`QP%":408`!;#Y4#`'4)I2!@`%L"!0,<!0  
MFE(&`6:"08`!9I&`@`%N.X"4)K`'IX\$N,(!4)J<`IX\$F00"G02XE@!0FIP"  
MG02X[@]0FL<"G02XP@%0FIP"G02:]`\*>!+B6`%":G`\*>!+CN`E":QP\*>!+C`  
M`5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`'IX\$N,(!4)J<`IX\$F00"G02X  
ME@!0FIP"G02X[@]0FL<"G02XE@!0FIP"G02:]`\*>!+C`"5":G`\*>!(`^2`L  
M=`/I(`&X[@]0FL<"G02XP@%0FIP"G02:]`\*>!+B6`%":G`\*>!+CN`E":QP\*>  
M!+C`"5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`'IX\$N)8`4)J<`IX\$F00"  
MG02XE@!0FIP"G02X[@]0FL<"G02XE@!0FIP"G02:]`\*>!+B6`%":G`\*>!+CN  
M`E":QP\*>!+C`"5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`'IX\$N)8`4)J<  
M`IX\$F00"G02XP@%0FIP"G02\_7@>5[`L4#`'4)I2!@`%OW\$\$#E<QP%":M`8`  
M!;`M4#`'4)I2!@`%L/E0,<!0FE(&`6P^5`QP%":408`!;`M4#`'4)I2!@`%  
MOVX\$#E<QP%":M`8`!9H)!@`%FD8`"6`/D@`+G0#Z2D!N.X"4)K`'IX\$N)8`  
M4)J<`IX\$F00"G02XE@!0FIP"G02X[@]0FL<"G02XP@%0FIP"G02:]`\*>!+B6  
M`%":G`\*>!+CN`E":QP\*>!+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`  
M`IX\$N,(!4)J<`IX\$F00"G02XE@!0FIP"G02X[@]0FL<"G02XE@!0FIP"G02:  
M]`\*>!+B6`%":G`\*>!+CN`E":QP\*>!+C`"5":G`\*>!)KT`IX\$N,(!4)J<`IX\$  
MOUX!`E>P+E`QP%":408`!;`@4#`'4)I2!@`%L/E0,<!0FE(&`6P+5`QP%":  
M408`!;#Y4#`'4)I2!@`%L"U0,<!0FE(&`6P^5`QP%":408`!;]N!`Y7,<!0  
MFK0&`6:"08`!9I&`@`%0#Y(`#]T`^DR`;CN`E":QP\*>!+B6`%":G`\*>!)KT  
M`IX\$N)8`4)J<`IX\$N.X"4)K`'IX\$N)8`4)J<`IX\$F00"G02XE@!0FIP"G02X  
M[@]0FL<"G02XP@%0FIP"G02:]`\*>!+B6`%":G`\*>!+CN`E":QP\*>!+C`"5":  
MG`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`'IX\$N)8`4)J<`IX\$F00"G02XE@!0  
MFIP"G02X[@]0FL<"G02XE@!0FIP"G02:]`\*>!+C`"5":G`\*>!+>1Y7L#]0  
M,<!0FE(&`6P(%`QP%":408`!;#Y4#`'4)I2!@`%L/E0,<!0FE(&`6P+5`Q  
MP%":408`!;`M4#`'4)I2!@`%L/E0,<!0FE(&`6P^5`QP%":408`!;`@4#`'  
M4)I2!@`%FD&`6:1@(`!8`^2`=[`/I\*0&X[@]0FL<"G02XP@%0FIP"G02:  
M]`\*>!+B6`%":G`\*>!+CN`E":QP\*>!+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$  
MN.X"4)K`'IX\$N,(!4)J<`IX\$F00"G02XE@!0FIP"G02X[@]0FL<"G02XE@!0  
MFIP"G02:]`\*>!+B6`%":G`\*>!+CN`E":QP\*>!+C`"5":G`\*>!)KT`IX\$N)8`  
M4)J<`IX\$N.X"4)K`'IX\$N)8`4)J<`IX\$F00"G02XP@%0FIP"G02\_7@>5[`  
M4#`'4)I2!@`%OW\$\$#E<QP%":M`8`!;#Y4#`'4)I2!@`%L"U0,<!0FE(&`6P  
M^5`QP%":408`!;`M4#`'4)I2!@`%L/E0,<!0FE(&`6P(%`QP%":408`!9H)  
M!@`%FD8`"6`/D@`.G0#Z2D!N.X"4)K`'IX\$N,(!4)J<`IX\$F00"G02XE@!0  
MFIP"G02X[@]0FL<"G02XP@%0FIP"G02:]`\*>!+B6`%":G`\*>!+CN`E":QP\*>  
M!+C`"5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`'IX\$N)8`4)J<`IX\$F00"  
MG02XE@!0FIP"G02X[@]0FL<"G02XE@!0FIP"G02:]`\*>!+B6`%":G`\*>!+CN  
M`E":QP\*>!+B6`%":G`\*>!)KT`IX\$N,(!4)J<`IX\$OUX!`E>P.E`QP%":408`  
M!;]Q!`Y7,<!0FK0&`6P+5`QP%":408`!;`M4#`'4)I2!@`%L/E0,<!0FE(&  
M`6P^5`QP%":408`!;#Y4#`'4)I2!@`%L"!0,<!0FE(&`6:"08`!9I&`@`%  
M0#Y(`"T`^G^+CN`E":QP\*>!+C`"5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"  
M4)K`'IX\$N)8`4)J<`IX\$F00"G02XE@!0FIP"G02X[@]0FL<"G02XE@!0FIP"  
MG02:]`\*>!+B6`%":G`\*>!+CN`E":QP\*>!+C`"5":G`\*>!)KT`IX\$N)8`4)J<

M`IX\$N.X"4)K`IX\$N)8`4)J<`IX\$F00"G@2XP@%0FIP"G@2\_7@>5[`04#`  
M4)I2!@`%OW\$#\$E<QP%":M`8`!;#Y4#`4)I2!@`%L/E0,<!0FE(&`6P+5`Q  
MP%":4@8`!;#Y4#`4)I2!@`%L"!0,<!0FE(&`6:"08`!9I&`@`%@#Y("`UT  
M`^DI`;CN`E":QP\*>!+C`5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`IX\$  
MN)8`4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@]0FL<"G@2XE@!0FIP"G@2:]`\*>  
M!+B6`%":G`\*>!+CN`E":QP\*>!+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"  
M4)K`IX\$N)8`4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@]0FL<"G@2XP@%0FIP"  
MG@2:]`\*>!+C`5":G`\*>!+>`1Y7L"U0,<!0FE(&`6\_<00.5S`4)JT!@`%  
ML/E0,<!0FE(&`6P^5`QP%":4@8`!;#Y4#`4)I2!@`%L/E0,<!0FE(&`6P  
M+5`QP%":4@8`!;`@4#`4)I2!@`%F@D&`6:1@(`!8`^2`G`=/I,@&X[@]0  
MFL<"G@2XE@!0FIP"G@2:]`\*>!+B6`%":G`\*>!+CN`E":QP\*>!+C`5":G`\*>  
M!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`IX\$N,(!4)J<`IX\$F00"G@2XE@!0FIP"  
MG@2X[@]0FL<"G@2XP@%0FIP"G@2:]`\*>!+B6`%":G`\*>!+CN`E":QP\*>!+C"  
M`5":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`IX\$N)8`4)J<`IX\$F00"G@2X  
MP@%0FIP"G@2\_7@>5[`G4#`4)I2!@`%L"!0,<!0FE(&`6P^5`QP%":4@8`  
M!;`M4#`4)I2!@`%L"U0,<!0FE(&`6P+5`QP%":4@8`!;`M4#`4)I2!@`%  
ML/E0,<!0FE(&`6P(%`QP%":4@8`!9H)!@`%FD8""`6`/D@`\*`0#Z2`!N.X"  
M4)K`IX\$N,(!4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@]0FL<"G@2XE@!0FIP"  
MG@2:]`\*>!+B6`%":G`\*>!+CN`E":QP\*>!+C`5":G`\*>!)KT`IX\$N)8`4)J<  
M`IX\$N.X"4)K`IX\$N,(!4)J<`IX\$F00"G@2XE@!0FIP"G@2X[@]0FL<"G@2X  
ME@!0FIP"G@2:]`\*>!+B6`%":G`\*>!+CN`E":QP\*>!+C`5":G`\*>!)KT`IX\$  
MN,(!4)J<`IX\$OUX!`E>P\*%`QP%":4@8`!;]Q!`Y7,<!0FK0&`6P^5`QP%":  
M4@8`!;`M4#`4)I2!@`%L"U0,<!0FE(&`6P^5`QP%":4@8`!;]N!`Y7,<!0  
MFK0&`6:"08`!9I&`@`%@#Y("`ET`^D@`;CN`E":QP\*>!+C`5":G`\*>!)KT  
M`IX\$N)8`4)J<`IX\$N.X"4)K`IX\$N)8`4)J<`IX\$F00"G@2XE@!0FIP"G@2X  
M[@]0FL<"G@2XP@%0FIP"G@2:]`\*>!+B6`%":G`\*>!+CN`E":QP\*>!+C`5":  
MG`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`IX\$N)8`4)J<`IX\$F00"G@2XE@!0  
MFIP"G@2X[@]0FL<"G@2XP@%0FIP"G@2:]`\*>!+C`5":G`\*>!+>`1Y7L"E0  
M,<!0FE(&`6\_<00.5S`4)JT!@`%L/E0,<!0FE(&`6P+5`QP%":4@8`!;`M  
M4#`4)I2!@`%L/E0,<!0FE(&`6\_<00.5S`4)JT!@`%F@D&`6:1@(`!8`^  
M2`!`?`=/I\*0&X[@]0FL<"G@2XE@!0FIP"G@2:]`\*>!+B6`%":G`\*>!+CN`E":  
MQP\*>!+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`IX\$N,(!4)J<`IX\$  
MF00"G@2XE@!0FIP"G@2X[@]0FL<"G@2XP@%0FIP"G@2:]`\*>!+B6`%":G`\*>  
M!+CN`E":QP\*>!+B6`%":G`\*>!)KT`IX\$N)8`4)J<`IX\$N.X"4)K`IX\$N,(!  
M4)J<`IX\$F00"G@2XP@%0FIP"G@2\_7@>5[!`?4#`4)I2!@`%L"!0,<!0FE(&  
M`6P^5`QP%":4@8`!;#Y4#`4)I2!@`%L"U0,<!0FE(&`6P+5`QP%":4@8`  
M!;#Y4#`4)I2!@`%OVX\$#\$E<QP%":M`8`!9H)!@`%FD8""`6`/D@`&W0#Z37"  
ML`=0FE<"G@2:P`&>!+>`1Y7FN4%`6:1@(`!;]>`1Y7FN4%`6:1@(`!;]>  
M`1Y7FN4%`6:1@(`!;]>`1Y7FN4%`6:1@(`!;]>`1Y7FN4%`6:1@(`!;]>  
M`1Y7FN4%`6:1@(`!;]>`1Y7FN4%`6:1@(`!;]>`1Y7OX4\$#E<QP%":M`8`  
M!9KE!0`%FD8""`6\_7@>5[!`!`Y7,<!0FK0&`6:Y04`!9I&`@`%OUX!`E>\_  
M\_@0.5S`4)JT!@`%FN4%`6:1@(`!;]>`1Y7FN4%`6:1@(`!;`,`4)I7`IX\$  
MOUX!`E>\_&4.5S`4)JT!@`%FN4%`6:1@(`!;]>`1Y70T<%#E<QP%":M`8`  
M!9KE!0`%FD8""`6\_7@>5[!S!0Y7,<!0FK0&`6:Y04`!9I&`@`%L`10FE<"  
MG@2\_7@>5[^C!0Y7,<!0FK0&`6:"08`!9I&`@`%L`]0FE<"G@2\_7@>5[!3  
M4#`4)I2!@`%F@D&`6:1@(`!;`)4)I7`IX\$OUX!`E>P05`QP%":4@8`!9KE  
M!0`%FD8""`6`^P\*>!`C`=/==,<":Z0`!0!5B>7H\*`"\_7@`>5P[H(`.\_7@`>  
M5YH"`P`%OUX!`E<.`Z`T#OUX!`E>:!P,`!5W+M`\_HU@4\!W0\*/`-V!K@#`.A6

M`.BA`+0(,O\_H0@6\*Q"1\_HEH`HE``,`\`B2P"B6P"B7`!`HDH`N\$`CL`\_`;`F  
MB@4F.@5T^R\*:!;G\_\_A"K@W`)!WT#/2]&C5@`>#A^Z+0&X&R7-(1\_#ND`  
MCL(F@":`'/X\!W0&/'1R`K`#4+0`Z%<%6`KD="VX\$A&S`.A\*!;@P\$;<`L@#H  
M0`6`^BIU%B:`#H<`;@`';D`!N@L!;02LR#H)07#M`\_H'P50N#`1MP"R`.@4  
M!5BQ``K2=0BR&#P#P=Q`8KRB3^RK0`@/X8=@\*T`:-.`(D66`"(#DT`Q@9,  
M``\$SP\*-2`(D65`##4!ZX<`6.V(`^2@``='7&!EP`1]8SX`^7``=0`#Q@9<  
M``"T`<T6=`:T`,T6Z\_2P7N@;`[!#Z!8#Z`P#S2.+W#:+1P3H(\_\_H;0^@6@"B  
M4`#\*`@"+W#:#5PHVBG<(-HI/!C:\*;P0ZT7<G.05W(\_[\*>!\_!SG@;\_LDZ#E@`  
M=Q/^S3HN60!W"XD64@")#E0`Z\$`#R@@"N`&BCY0`(L.4@"+%E0`Z#<\$BQ92  
M`.@D`\OH&0.X``\*:\*/E`B\J\*%E0`Z!P\$R[@!!^L#N`\$&4.C\`EB\*/E`B@Y2  
M`(KNBQ94`#KN=0(RP.CW`\N+W#:#5P8VBG<\$\_LH"%E(`<A<Z%E0`=Q`^S@ (V  
M4P!R"3HV50!W`^C!`LH\$`.BT`HK"\*@92`/[`R^BH`HK&\*@93`/[`RX0<-HI`  
M!\*CP=`0D#PR`@"90`'`(E`R@(`B)PVB<\$)`>Q!-+@@`90`(\(!E`R@(`  
M@`90`/?+@`Y0`C+H%H`HE`RX0<-HM7!`02=!:X0`".P#/\_ )HH%BQY6`(O+  
MZ`8`2G7XR@(`)CH%=0+B^<.+W#:#7P2XW32Z\$@`[TW,:]\_.+V.1AJ`-U`P#  
MYF&PMN9#BL/F0HK`YD+\*`@#D823`YF'+@#Y;``!U"+0!S1:P`'0`L`'+H%L`  
MQ@9;``\*P`42,N3-%@K`=0J()EL`"N1U`K`#Z!7^RX0<'C;%?P3`10\*PU\=%  
M!(`C86``(E%#(Q=#L=%\$%H#C\$T2QD4P`!\_\*!`"+W!XVQ7\N\$)(#NW`\$B\N!  
M?0\*QUW0\*QT4"LM>X/P2+V(E%%(Q-%HE=&(Q-&HE-'(Q-'C/'`'\H\$`%6+[ ,1^  
M!B:+501\*2B:+=0@FQ`T,,)0&!EL``[H7/^Y`0`\"`0T/!-T,#P\$=\$1)/!MT  
M)SP!=",\!G0W/!IT1CP=-\$\\('+/.)ITRR:(`4/HF``[WG;`B\_/KO`0;=+BP  
M".B`'+`@Z((`L`CH?0!+XNKKI#0>=\*`FB@\$(`\*9Z&H`0^+OZY&`/DL``2\*  
M)H@!0^L\*Z\$X`)L<!#0I#0\1^!C/`)HE%"" :)70I=R@0`B]PVQ`(\$ )HM-""8I  
M30CC&2;\$?0R`/DP``4+)HH%Z!P`1^+WZP/HG`#HV/PSP,H\$`#/'R@0`L`WH  
M`@P"E-14@90Z`(`6#P`="H`"0M/'UT,SP\*=#6T"8H>4`R\_[D!`%+H90%:  
M\_L(Z%E0`=B`\*%E(`ZQ>T#NA1`>L3.A92`'0-\_LKK"8H64@#K`^@(`. @M``=:  
M650#\_L8Z-E4`=AC^SE%2N`\$&BCY0`(L.4@"+%E0`Z!8!6EG#M`,R\_`D`,`0"  
M,O\_I!0\$>N\$``CMB+%E``XO:B<FB@4\!W0A/'AT+#P\*=#4\#70Y1\_[" .A94  
M`'8\Z&\`Z\*#\_BA92`.LLZ&`,`45\*X!P[HPP!:6>L<Z%0`.A92`'03\_LKK#^A`  
M`.AX^L`Z#`\_BA92`\$>+XO:XJ;H,0`>N\$``CMB)%E``BL;V)DH`,08#PHO(  
MBQ9C`+'[NL`BL5"[NL`2K`/[NL`BL%"[A\_#.\_=T8U%25QX&B\KSHH630"\*  
M-E`N\$``CMB\*Q\_8F2@`R\_P/#T>"+^ (O:BQ9C`(/"!K@`N(`^20`'=0\*TL`8?  
MCL#/"MMT%JR\*V.RH`77[^NRH`73[B\K^^+LZP:\*YZRKXOP`'U]:6<-65U4&  
MS1`'75]>PP`.....+IP!8[:C`8X`#/MB\0%\$P"Q!-/HC-(#PJ,\*  
M`\*,`,`&!"C#@"C&`"C`"C)`FBQ8``(D6(`#`!BH`J0",#BP`OUX"ONX!  
MN1`,`D/PNK+0US2&`8Q%`H/'!+.0`@X?NM`N`ES2&ZY@"X(R7-(;JN`+@D  
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end

From owner-qrp-l@Lehigh.EDU Mon May 20 22:33:40 1996  
From: Mike Czuhajewski <wa8mcq@u1.abs.net>  
Subject: [8724] QRP Hall of Fame inductees, 1996  
Message-ID: <Pine.BSI.3.93.960520124234.8478C-100000@u1.abs.net>

Here is the announcement of the QRP Hall of Fame inductees for 1996, whose identities were made public recently at Dayton. This is the text as it will appear in the July issue of the QRP Quarterly.

Attention QRP Quarterly subscribers: you will see this again, so you may want to just look at the names of the people and skip the rest of it for now :-)

73 and Queue Our Pea DE WA8MCQ                      wa8mcq@abs.net

Vice President, QRP ARCI

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#### THE QRP HALL OF FAME FOR 1996

Michael A. Czuhajewski WA8MCQ  
7945 Citadel Drive  
Severn, MD 21144

The QRP ARCI is pleased to present the 1996 inductees into the QRP Hall of Fame. Announced publicly at the QRP banquet at Dayton, seven people (a little under half of those nominated) joined the four 1992 inductees. (The Hall of Fame process is not a competition for a certain number of slots; rather, each nominee is voted on individually. This year the voting body was the [outgoing] Board of Directors. At Dayton it was agreed to expand that in the future to include the Board, President, Vice President and Hall of Fame members.)

Before anyone asks, there was no Hall of Fame action for 1993, 1994 and 1995 for a variety of reasons, but now that there is a single person in charge of running the QRP Hall of Fame--me--there will be a regular call for elections. And if things fall through the cracks again, at least there is now a specific person to blame!

These are the 1996 inductees into the QRP Hall of Fame (in alphabetical order):

Brice Anderson, W9PNE  
George Burt, GM3OXX  
Tom Davis, K8IF  
Wes Hayward, W7ZOI  
Rick Littlefield, K1BQT  
C. F. Rockey, W9SCH  
Adrian Weiss, W0RSP

From my days in the Air Force I remember something called the Twelve Outstanding Airmen of the Year. It was quite an honor to be selected from a few hundred thousand enlisted people. But when the winners were announced, the short paragraph or two published about each ones achievements often didn't really do justice to them. It's the same with the QRP Hall of Fame, but I'll give it a try anyhow. There will be some relatively new QRPers who may not know of the

accomplishments of many of these people, and when they see the names they'll say "huh?" Rest assured that for each person who does that, there will be several who will smile and say, "Ah, but of course! Justice done at last!"

Brice Anderson, W9PNE

From a nominating letter submitted by W9SCH--"I first became aware of the work of Brice during our mutual "adventures" with the Milliwatt [QRP magazine] during the early 1970s. Brice has made numerous innovative contributions to the QRP literature in nearly every aspect of the activity (look through the files of almost any QRP publication of the last two decades, or more to confirm this). I personally recall his "Sucrets Box QRP Rig" in the Milliwatt, and his numerous articles on antennas (particularly small transmitting loops) as being particularly stimulating and inspiring to me, for instance. To me, Brice Anderson will always be 'The Grand Old Master of Ninth Call Area QRP'."

Brice reports that he started his ham career with QRP in 1932 at the age of 13, running one watt input to a UV-199 tube. He later graduated to a type 45 tube at a blistering three watts output. In the 1970's and 80's he was involved extensively with milliwatting; he worked all 50 states with 50 mW output, followed by 37 states with 25 mW, including Hawaii on SSB. In 1975 he received an ARRL WAS certificate earned with one half watt input, the first WAS issued for such low power. In 1982 he received DXCC QRPP Trophy #40 from the Milliwatt magazine, which also honored him for 50 years of QRP operation.

In the 1989 ARRL CW DX contest, he dropped to 20 mW output and worked 47 DX stations in 29 countries; in one 44 minute session he worked 5 continents, although it took him another 4 1/2 hours to find the 6th; that made it a 5 hour WAC with 20 mW! When the 30M band was opened, he worked all 50 states in 2 weeks with the QRP "legal limit" of 5 watts. In the first CQ WW WPX CW contest in 1979, he entered in the QRPP division and was the highest QRPP scorer in the world. (Brice also send along a list of almost 3 dozen contests in which he was first place QRPer in Illinois.)

George Burt, GM30XX:

Although less known on this side of the pond than in GQRP

circles, GM30XX has been deeply involved in QRP for a large number of years, both operationally and technically, and has many truly outstanding accomplishments to his credit. He received Adrian Weiss' coveted DXCC Milliwatt trophy #2 (December 1978) for working at least 100 countries with one watt or less; as of 1992 he had 200 countries confirmed with 1 watt output, and he also has over 70 countries confirmed two way QRP. George was the very first person to win the difficult and prestigious QRP Master award conferred by the GQRP Club, in itself a most impressive achievement.

Not only a very accomplished QRP operator, George is technically astute. He has had numerous technical articles in SPRAT, and is the originator of several very popular GQRP projects, such as the OXO, ONER and STX. Says G3RJV, "the ONER [transmitter] must be the most commonly built QRP circuit in the world - over 1,000 kits have been sold!" G3RJV also says, "All of his QRP work has been with completely home designed and homebuilt gear of a very high standard, and he has never used more than 1 watt of RF output, and only simple wire antennas. I think, world wide, few could beat him as a QRPer. I do not think you could find a more worthy recipient anywhere."

George Burt was unanimously inducted into the QRP Hall of Fame.

Tom Davis, K8IF

Although apparently not involved in QRP in any capacity since the late 1970's, Tom had a profound affect on the QRP community. While the QRP ARCI was in existence at the time, it did not have the "5 watt and under" focus that it does today. The Club was originally founded with the goal of members voluntarily limiting their power to 100 watts (input, in those days) to reduce QRM on the bands and make operation more enjoyable for all. While there were many who were interested in "true QRP", that was not the basis of the club. As detailed in the October 1995 QRP Quarterly reprint of an Adrian Weiss CQ magazine column from the 1980's, Tom sensed the strong desire of many to have an organization devoted to low power operation and experimentation.

In his nominating letter, Rich Arland (K7YHA) said, "Tom's dedication to low power communications resulted in significant changes in the QRP ARCI bylaws and resulted in changing the club from a 100 watt organization into a true QRP club. Tom's leadership during the trying times of the late 1970s gave hope that our club might evolve into a club that really represented low power communications.

"He eventually became President of the QRP ARCI. Over a period

of several years he managed to help many "true QRPers" get elected to the Board of Directors. Through his persistence, a vote of the membership was taken which overwhelmingly favored changing the tone of the club from a 100 watt dinosaur into a 5 watt survivor. This eventually led to a massive rewrite of the club bylaws and awards/contests criteria. Finally, through the dedication and tenacity of Tom Davis, the QRP ARCI could proclaim that it was truly a QRP club that represented the interests of those radio amateurs who wished to run 5 watts or less RF output power. Without his leadership, the QRP ARCI would not be the guiding light of low power communications to amateurs all over the world."

Wes Hayward, W7ZOI

This was probably one of the easiest votes this time around! Few have done more for QRP than he has, having co-authored the "QRP bible", Solid State Design for the Radio Amateur, co-authored by 1992 QRP Hall of Famer Doug DeMaw, W1FB. One of the best known QRP technical gurus, Wes also has a long string of excellent technical articles in the amateur press which have been of tremendous value to technically oriented QRPers everywhere.

When I brought up the subject of nominating him, Wes told me not to bother. I told him that I'd respect his wishes since I knew others would jump at the chance. Sure enough, the first one received was from his friend Roy Lewallen, W7EL. Says Roy,

"A great deal of the work I've done, and much of the work being done by others in the technical arena of QRP, has its roots in Wes' many unique insights and accomplishments. He pioneered the modern use of direct conversion as a low cost but high performance technique. Most modern QRP superheterodyne receivers use crystal filters designed using methods he developed. Hundreds, if not thousands, have duplicated his "mountaineer" rigs and his "universal" QRP transmitter.

"Many of the circuits and techniques we use today were popularized, if not originated, by Wes; his TR switching, oscillator, transmatch, amplifier, RIT, and other designs can be seen scattered throughout modern QRP rigs. Wes has left a rich heritage of circuits, techniques, and ideas which are still being built upon. The book "Solid State Design for the Radio Amateur" remains a classic after nearly 20 years of publication, as do many of the myriad articles he has published over the years.



"I personally have used many of Wes' ideas and circuits as the basis for the rigs I've developed. This is true of nearly all of the people currently doing QRP design. To my mind, among the entire QRP community, none is more deserving of this honor than Wes."

Wes is also the author of Introduction to Radio Frequency Design, recently reprinted by the ARRL. Originally published in 1982, this is a more technical, in depth treatment of a wide variety of topics and is prized by many QRPers.

Wes was inducted unanimously into the QRP Hall of Fame.

Rick Littlefield, K1BQT

From the nomination by Ken Roberts, VE3BGW: "Rick was instrumental in popularizing the NE602 superhet design for homebrew QRP rigs. Until his initial article in Ham Radio in January 1989, typical small QRP rigs had direct conversion receivers. A lot of new designs have evolved from work first done by Rick. Designers such as Dave Benson, NN1G, and Wayne Burdick, N6KR, as well as many from Europe give credit to the originator of this QRP application. Rick's design was well done, his articles well written, his workmanship excellent and his advice and help freely given.

"But that wasn't the end of it. Rick worked long and hard with MFJ to bring their popular 90XX series to market, proving the quality of his design in the commercial marketplace. The popularity of the MFJ products is a tribute to the initial design done by Rick. Over 8 years have gone by since his first work, and the basic design is still being emulated. It is rare when one individual can force a hobby to take a quantum leap forward. Rick has done this by recognizing the value of new devices, applying them in a robust design, fabricating the design with professional excellence and writing of his work in a down to earth style. In doing so he has moved our hobby forward to a new plateau."

And from Bob Gobrlick, VO1DRB/WA6ERB "I, and I suspect many others, consider him to be the "father" of the NE602-based QRP transceiver. The design and construction work that Rick did has inspired many modern day NE602 superhet designers. The number of hams drawn into QRP as a result of Rick's simple yet high performing NE602 transceiver designs is immeasurable."

Rick is also the author of a number of other homebrewing

articles over the years which are of interest to QRPers.

C. F. Rockey, W9SCH

Another long time QRP'er, "The Rock" is well known by many and considered by some to be a "QRP national treasure". Said Hans Schroeder, AE9G, "Hardly an issue of any of the QRP publications goes by that he does not have some sort of an article in it--GQRP, Michigan QRP, QRP Quarterly. Rock is a philosopher (you should read some of his letters), somewhat eccentric, but a joy to read. And in particular he is a QRP-philosopher. By that I mean that his whole approach to the ham business is to do the most with the least, whether that be building equipment or antennas."

And from Lowell Corbin, KD8FR, "Rock has been a long-time supporter of QRP and has produced a wealth of information through the many articles he has written for the various QRP clubs' publications. He has been the mainstay in supplying articles for The Five Watter [Michigan QRP Club journal] through the years, as well as for the QRP Quarterly and SPRAT."

"In an era when many old timers reject newer hams because they did not come up 'the hard way', or else shrug their shoulders at their lack of technical expertise, Rock welcomes them to the world of what he calls 'real ham radio' by patiently teaching them fundamentals and encouraging them to believe that they, too, can build and experiment with the best of them."

From Rich Arland, K7YHA, "I have read Rock's stuff for many years and he is an absolute QRP National Resource... lucky we have him in The Five Watter." Brice Anderson, W9PNE, writes, "Many antenna topics have been covered by my friend C.F. Rockey. If you don't know how to build a simple but effective antenna, you haven't read his articles in The Five Watter."

Adrian Weiss, W0RSP

Finally, at the end of the list only by accident of having a last name starting with "W", one of several people without whom the QRP Hall of Fame would not be complete. Ade was co-founder of The Milliwatt: National Journal of QRPp, which ran from 1970 through

1975; writer of a QRP column for CQ magazine from the mid 70's to mid 80's, and several technical articles in various magazines. Although I had a hand in the founding of the Milliwatt--I was already publishing the precursor to it when he came on board--it was the vision and drive of W0RSP that made it what it was.

I left to join the military after 4 issues, but he kept at it through the next 5 years, with six issues per year of QRP operating news and techniques, construction articles, tutorials, etc. The Milliwatt was the pioneering QRP journal in this country, probably in the world, and I am one of the lucky few to have a complete, original set of them, courtesy of K7YHA. (In the last few years I reprinted the entire set in three separate runs, the last in conjunction with Bill Kelsey, N8ET, and there are now well over a hundred more people with copies of this excellent QRP journal.)

From the nominating letter of Donald Younger, W2JEK--"Through his efforts as a writer, QRP has become a well recognized facet of amateur radio. His accomplishments include The Milliwatt magazine and later his QRP column in CQ magazine, in addition to numerous articles in CQ and elsewhere. He also was instrumental in the creation of a QRP category in the CQ Worldwide DX contest, the first of many contests that now have a QRP section. His books, "The Joy of QRP" and "The History of QRP in the US" are still sought by QRPers today."

From Rich Arland, K7YHA: "Adrian Weiss has been a major influence in QRP for over 25 years. The Milliwatt served to enlighten thousands of low power communicators around the globe. In 1975 Adrian became the QRP editor of CQ magazine, a position he held for almost 10 years. His monthly articles on QRP operating and construction provided a guiding light to low power enthusiasts everywhere. Finally, a mainstream ham radio magazine had seen fit to recognize QRP as a major facet of the ham radio hobby by publishing Adrian's articles about it on a regular basis. This served to confirm that the status of the low power operator had risen from obscurity to mainstream ham radio.

"Although both of his QRP books were printed in limited quantities, they quickly became historical landmarks in the evolution of low power communications. Both are "must" reading for the serious QRP'er.

"In order to stimulate competition and promote excellence in low power communications, Adrian sponsored the DXCC-QRPp Trophy (for working 100 countries using less than 5 watts output), the DXCC-200-QRPp and DXCC-200-Milliwatt Trophies (for working 200 countries with 5 watts and under 1 watt respectively) and the

Milliwatt Field Day Trophy for operators using less than one watt during the annual ARRL Field Day exercise.

"Adrian was responsible for the early emergence of the "Milliwatters", a group of hard core QRPers who amazed many of us by performing seemingly impossible feats of long-haul communications using milliwatt power levels. His dedication to this facet of the low power hobby served to stimulate many of us to try milliwatting and push our operating skills and station efficiency to the maximum.

"Adrian Weiss is the epitome of a True QRPer. His dedication to the hobby and his outstanding efforts to promote low power communications on a global scale set him apart from his peers."

AND FOR NEXT YEAR...

Later in this year, we'll announce the opening of nominations for the QRP Hall of Fame for 1997. That will be your chance to throw out the name of your favorite QRP hero(s) for consideration. If you know of someone deserving of the honor, sit down and write up a nominating letter with plenty of facts and justification, and their name will be on the ballot.

--qrp--

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: Mike Czuhajewski <wa8mcq@u1.abs.net>  
Subject: [8740] QRP Quarterly subs, renewals  
Message-ID: <Pine.BSI.3.93.960520164039.12712B-100000@u1.abs.net>

Regarding QRP ARCI applications and renewals, this information will be in my Vice Presidents column in the July issue of the QRP Quarterly. It applies to all QRP ARCI members, and potential members. Please note that Mike Bryce is also the Publicity Officer, the one to contact with requests for applications, etc. Some of these same problems also apply to that area.

RENEWALS, SUBSCRIPTION PROBLEMS, ETC

I've been trading lots of e-mail with Mike Bryce on this subject lately, and it came up at Dayton. Please read the following

carefully:

If you want to join the QRP ARCI or renew your QRP Quarterly subscription, make a check out to QRP ARCI, not to Mike Bryce, and mail it to Mike Bryce, not to anyone else. If you have subscription problems, write or send e-mail to Mike Bryce  
(73357.222@compuserve.com)

Myron Koyle, N8DHT, reports that he gets about a third of the applications and renewals sent to him. Send them to Mike Bryce instead; it's his job, and sending them elsewhere just slows things down and adds an extra chance for it to get lost in the mail. (I've even had people send ME renewals!)

Please make your checks out to QRP ARCI, not to Mike Bryce. He does not get the money, the club does. If he gets too many checks made out to him, the IRS may want to know where it's all going and why it's not reported as income!

If you have subscription problems, such as missing issues, do not contact Myron, do not contact me, do not contact N8CQA or your favorite Board Member or anyone else and don't post a complaint to QRP-L--contact Mike Bryce. That's his job, and going through anyone else only complicates and delays things. I get lots of complaints about subscriptions, and so do Myron, Buck and others. All we can do is tell you to contact Mike.

Some people tell me they did that already and nothing happened--if that's the case, we'll tell you to try it one more time and if nothing happens again, then tell us and we'll look into it. The US mail is not notoriously reliable, as has been well documented in recent years, and particular parts of the country are notorious for lost, discarded and stolen mail.

And don't count on e-mail being 100% reliable, either. Many people tell me they sent e-mail to Mike and nothing happened. Mike tells me he never got them; I've been on both of ends of non-delivered e-mail dozens of times, as many of you probably have been. If you send e-mail to Mike, add wa8mcq@abs.net to the CC line, and perhaps n8cqa@tir.com as well, and ask Mike to acknowledge receipt by return e-mail. If you don't hear from him in a week, let me know about it. Don't put complete faith in either the USPS or the e-mail system, since neither deserves it.

Finally, be sure you renew your subscription well ahead of time. As mailing time approaches, Mike runs off the labels and gives them

to the printer. If you have not renewed by then, your label is not there and you will not get that issue. You must have your renewal in several weeks ahead of the issue date. Do not count on Mike replacing copies that you missed because you didn't renew in time; those cost us \$1.70 to mail first class and will no longer be sent at no charge to you. You might still be able to get them, but you will be expected to pay the extra postage. The same applies to all back issues that you missed: we had to pay to print those issues, and we have to pay to mail them to you--and a special mailing by first class costs a great deal more than bulk mail. Issues that were missed due to nonrenewal can be purchased; do not expect them to be free.

If you missed issues due to problems in the postal service, they will be replaced free if available, or your subscription will be extended by an appropriate number. However, if you moved and did not send us a forwarding address, you must pay for those missing issues if you want them. It is your responsibility to let Mike know when you move, and be sure to do it well in advance so the change will make it to the data base in time to get changed on the labels.

Again, to join or renew or complain about subscription problems, contact Mike Bryce--that's his job, he loves it, doesn't get paid a penny, and does a great job, especially with 1500 or more people on the mailing list. He reports that subscription complaints dropped greatly after some changes he made to the system, and he also added a line to the address labels that tells you exactly what issue will be your last. If you complained to him and nothing happened, do it one more time and then let me or Buck know if intervention is needed. Remember, it's up to YOU to keep us informed and paid so the QRP Quarterly keeps coming to your door!

--qrp--

From owner-qrp-l@Lehigh.EDU Mon May 20 22:33:40 1996  
From: ohrqrp@netonecom.net  
Subject: [8744] QRP-L  
Message-ID: <M.052096.161352.59@rc-47.netonecom.net>

QRP-L Group

Well it sounds like everybody had a great time at Dayton. Unfortunately we were

unable  
to attend this year. Will look forward to attending next year.

We have changed providers and have a new E-Mail address. Our new address is  
ohrqrp@netonecom.net

Dick, KE8KL  
Oak Hills Research

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: KFGlynn@aol.com  
Subject: [8736] QSL for Armed Services Day  
Message-ID: <960520154932\_494850112@emout10.mail.aol.com>

Hi gang,

I worked NMN in Portsmouth, VA this weekend split. Per QST is gives address  
to send in copy for CW award, but not for QSL. Should I send my QSL to the  
same address?

Tnx for the info.

73 Kevin KB2TE0

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: QLF%mini@magic.itg.ti.com  
Subject: [8712] RADIO SHACK DSP  
Message-ID: <9605201311.AA19261@itg.ti.com>

From: Brad Bradfield QLF

Subj: RADIO SHACK DSP

As has been discussed here in the past, Radio Shack is closing out their  
digital signal processor. What originally sold for 79.95 is now selling for  
under \$40. If your local shack doesn't have one in stock, ask them to check  
the district to see if they can locate one. I bought one Friday, but haven't  
had it on the air yet. Actually I haven't been on the air in so long I forget  
whether the dashes are the long ones or the short ones. HI HI Oh, well!

73's

Brad, WB0CGH

\*\*\*\*\*  
Brad Bradfield, PE                      Electrical Design Engineer  
(H) 817-321-2960                  Texas Instruments, Inc.  
(W) 214-462-6230

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: wa5whn@ix.netcom.com (Jay Miller)  
Subject: [8710] Riley URL Photo Updates  
Message-ID: <199605201251.FAA08443@dfw-ix7.ix.netcom.com>

Please bear with us, for a bit of time. Yes, those of You who are accessing the WA5WHN URL, through the NorCal Web page (<http://www.fix.net/norcal.html/>), it's not complete yet. WB5OAU/4 is still updating the Riley photos. Some of the photos are up, with no captions or incorrect captions. Please, it is still under construction, I will advise as to when it is finished. Then we can all change the captions. Hmmmm, I would even spring for a new NorCal kit, for the best caption of a certain photo, but I will hold off, until they are all up on John's WB5OAU/4, Web Space. Thanks John, WB5OAU/4 & Jerry, WA6OWR, and to those who are telling me that it's not finished, "thanks, yes, we know."

From owner-qrp-l@Lehigh.EDU Mon May 20 22:33:40 1996  
From: "Bill Kelsey - N8ET - Kanga US" <kanga@bright.net>  
Subject: [8759] RSGB Books Available  
Message-ID: <199605210307.XAA21996@brutus.bright.net>

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HF Antenna Collection  $16.50
Practical Wire Antennas  $13.00
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HF Antennas for All Locations \$21.00  
Test Equipment for the Radio Amateur \$15.50

I also have copies of The Electronic Data Book for Homebrewers and QRPers by NA5N (\$15 for a limited time for those of you who could not make Dayton)

Add \$3.00 to cover the postage.

73 - Bill Kelsey - N8ET  
Kanga US  
kanga@bright.net  
419-423-4604  
<http://qrp.cc.nd.edu/kanga/>

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: harry.bump@hamdata.leba.net (Harry Bump)  
Subject: [8756] Saint Louis Tuner  
Message-ID: <832639277@hamdata.leba.net>

Hey Gang,

Saint Louie Tuner #139 is complete! Here's my thanks to those of Norcal and the Saint Louis QRP Society that made the project possible.

Now fer my notes (hope this isn't too much re-hash):

Had some trouble with L1 at first. Wound the coil once and got only 56 turns on it and it didn't look good. Tried to clean up one of the 'taps' with no luck; time to re-think. I cut the wire from the core and went to my wire spool for more. With the second attempt, I wound the coil to the first tap, then used my trusty propane torch to burn the enamel from the wire for about two inches. Very carefully, starting about two inches from the core and moving the flame towards it. The enamel burns from the heat before the flame gets there so there's no need to take the flame close to the core (yes, I re-lit the torch twelve times). Rubbing with a bit of steel wool yields a couple inches of wire without insulation. Then I folded the uninsulated part in half, bringing the working end of the wire back to the core. Grab both wires there with a hemostat or needlenose pliers and give the bare wires a twist or two as close to the core as you can. Squeeze the parallel wires together and solder. Then you can continue to wind to the next tap. Doing it this way I got my 60 turns and had a bit of room left over!

Oh, someone had asked the group about the 'flat edge' of the core. That is the part that's on the table when you lay the core on the table, as opposed to the 'outside edge' which is the outside curve of the 'donut'. The goal is to get the taps sticking out of one flat edge (or side) so that when the core is positioned behind the switch the taps line up with the twelve switch tabs.

Before installing the coil, solder a wire on point 'A' of the twelve position switch and connect it through point '12'. This is the ground wire that was missing on the schematic and later will be connected to ground.

Also have a note about page 8 step 11, where the RF wires from the pc board are to connect to the front panel switch #1. Get the front panel and board mounted to the bottom shell half, then position the two wires that go to point 'A' and point '1'. Just get the wire lengths right, don't worry about trying to connect the wires or wedge a soldering iron and solder in there. Then remove both the board and front panel from the shell. It's now much easier to position those wires alongside the switch tabs and solder them! If you cut the wires right it will go back together easily. I also added a piece of insulation to cover the wire to position '1' (the one that goes UNDER the board).

It looks good and works great!

73,

Harry, KM3D

-----  
  
From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: bfollett@ditell.com  
Subject: [8723] St Louis Tuner Toroid winding and painting suggestions  
Message-ID: <199605201615.KAA13761@orion.ditell.com>

Gang:

Steve, N2MNN, wrote a few interesting ideas about winding the "difficult" T-1 toroid, and some additional suggestions for painting to me. Here they are:

<<

#### WINDING THE TAPPED TORIOD

I have found it easier strip the wire as you wind the inductor. Scrape a 2 inch section of the wire for the tap with a razor blade while the wire is stretched out straight just before the tap position is reached. Then wind the loop loosely. The wire can be then twisted at this point since it is already stripped. Then wind more turns until the next loop position is approached, and repeat the process.

I think this is better than putting one loose twist in the wire to mark the tap, and then untwisting the wire later to strip it of its insulating coating, and twisting it again. The wound wire looks neat as I have no kinks in the wire from the untwisting and twisting process. Plus I can wind all the turns of the toriod tightly as I progress. This is important if you want to get all 60 turns on the toriod.

#### PAINTING

This is the first case that I painted that ended up looking professional. I used Kylon brand "Epoxy-Enamel" spray paint in the "RED" can. The cans were \$2.41 each at Home Depot. The primer dried quickly. I wet sanded it lightly after letting it dry overnight. I then used blue for the covers and almond for the front and rear panels. The blue is a little lighter than the Wilderness covers. It is almost the same color as my Heatkit automotive tester's blue plastic carrying case. The blue and almond is a nice combination. This paint stays wet longer than regular Krylon, but in twenty minutes was tack free enough to allow me to move it to a safer place to let it dry. After 6 hours it still feels tacky to the touch, but does not make a fingerprint if you touch it. I think that I will let it dry for a week, as I do not want to damage the perfect finish. It appears to be a very smooth semi-gloss with the brushing lines of the aluminum showing through very slightly if you look at it in strong light. I will be using this paint in the future for other projects since it came out so well, and the color combo is so neat.

I though best to give this info to you since you distributed the original comments.

72,

Steve, N2MNN>>

-----  
Bob Follett WA7FCU, QRP-L # 129, NorCal, ARCI, 10-10  
2861 Estates Dr. VOICE: 801.649.6457  
Park City, UT 84060 Home Office E-mail: bfollett.ditell.com

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: Hans-Joachim Dezelski <hjd@abt2-a.d6.verwaltung.uni-tuebingen.de>  
Subject: [8711] St. Louis Tuner  
Message-ID: <Pine.LNX.3.91.960520144939.130B-100000@abt2-a.d6.verwaltung.uni-tuebingen.de>

My wife just called: SLT #259 arrived over here in Tuebingen. So I have to wait another 3 hours before I come home. But then...

Thanks Doug, for your work.

73 de Hajo DL1SDZ

-----  
| Hajo Dezelski | Email: dezelski@uni-tuebingen.de |  
-----

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: "Richard A. Dyer" <rdyer@clarkpud.com>  
Subject: [8730] St. Louis Tuner-Thanks Doug & Team  
Message-ID: <2.2.16.19960521025924.084f5792@clarkpud.com>

I received my tuner kit, Thanks to all for the new project. I look forward to getting this going and the new ideas you have worked out in Dayton....

R Dyer  
KC7HBT

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: Wayne Barnhart <wayneb@on-ramp.ior.com>  
Subject: [8754] the book  
Message-ID: <Pine.LNX.3.91.960520172201.2424A-100000@on-ramp.ior.com>

I was apparently one of the few who could not make it to dayton but I did know someone who was going so I charged him with picking up the qrp BOOK by NA5N. I even gave him the location for the BOOK which was published on the net here just before Dayton.

Ok, I understand that there was some kind of problem and the BOOK was not available at the qrp table and my friend did not have transportation to where the BOOK was now supposed to be. So I have no BOOK.

Now that the Dayton event is over could ordering information for the BOOK be posted. I joined the Colorado group just about one issue to late and of course the information I am looking for was in the issue that I missed. They (CQC) were going to send me a print of the article but and I fully understand, they forgot. No problem as the BOOK was coming out so I figured to wait for it. Let me tell you about waiting...well, let me not.

I be ... patiently ... here. Waiting

:) 73's

Wayne WB7WHI  
Spokane, Wa.

From owner-qrp-l@Lehigh.EDU Mon May 20 22:33:40 1996  
From: Denton Larson <dlarson@ic.waseca.mn.us>  
Subject: [8753] What a mess  
Message-ID: <199605210034.TAA09283@IC.mankato.mn.us>

Boy it sure is a bummer to come home from an enjoyable trip to Dayton to come home and see a crumple tower, antennas, and a TVRO dish in the back yard. 100+ winds came through the area early sunday morning. The rest of the town is a mess also. I guess nothing could have been done, the tower survived 90 MPH in the past, but a guywire snapped. So I guess I'll be silent for a while. Sorry I didn't make it to the forum, :-( it was just so nice outside :-) 73/72's to all, I'll be reading the mail,

Denton WB0ZUR

WB0ZUR QRP-L #414  
Denton K. Larson  
dlarson@ic.waseca.mn.us  
dlarson@efjohnson.com  
71350.1667@compuserve.com

From owner-qrp-l@Lehigh.EDU Mon May 20 22:33:40 1996  
From: svecbrdk@well.com (Lillian Svec and Wayne Burdick)  
Subject: [8717] Wilderness "KC2" keyer/counter/S-meter/Wattmeter for QRP rigs  
Message-ID: <v01510114adc644d9351c@[206.15.66.101]>

Thanks all for a fun time at Dayton. Really enjoyed seeing everyone and getting caught up. The ARCI bunch did a great job.

The cat's out of the bag on what I brought with me: the prototype of the NorCal/Wilderness Radio KC2. I went through half a box of throat lozenges demonstrating the thing :)

Like usual, we'll be conducting a limited field test of the KC2 through NorCal. Doug Hendricks, KI6DS, will have an announcement about that soon.

For the few of you who are on the list but didn't make it to Dayton, here's brief description of the new KC2:

- big brother to the KC1, a bit larger at 1.1" x 2.8"; designed specifically for the Sierra and Cascade but will work with any rig that has a VFO of 6.4MHz or less (NOTE: the KC2 will NOT fit on the '40A front panel)
- 4-digit LCD frequency counter with 100Hz resolution, four programmable VFO offsets; hysteresis implemented in firmware eliminates last-digit flicker; improved VFO buffering on board (two stages)
- 0.4" LCD digit height with excellent visibility
- Iambic keyer with 50+ bytes of nonvolatile message memory and settable keying weight
- fast, effective bar-graph S-meter using 8 of the LCD segments
- as digital watt-meter, reads your power directly in watts, up to 9.9 (this IS a QRP accessory :)
- all programming is done with front panel pushbutton switches--NOT the keyer paddle--so it's quite compatible with SSB rigs;
- counter calibration is done just like you'd set a digital clock, so there's no need to calculate offsets or to know what your I.F. is, etc.
- counter or S-meter mode runs continuously with zero digital noise in receiver, yet no need for a receiver mute line, thanks to special hardware/firmware techniques

- only 4mA total current drain
- AUX output available which can be used to turn on a noiseblanker, lamp, or other accessory

The KC2 will be probably be available in late August. Estimated price: \$69.

If you're interested in getting on the snail-mailing list for this kit, please call or write Bob Dyer, KD6VIO, at:

Wilderness Radio, P.O. Box 734, Los Altos, CA 94023-0734

Phone: 415-494-3806

I'd be very interested in your early comments or suggestions about the KC2 features list. The firmware is up and running but is still somewhat malleable.

If you'd like to send me e-mail about the KC2 or other topics, please use my new address, svecbrdk@mail.well.com.

73,  
Wayne  
N6KR

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: Dick Schneider <74602.3317@CompuServe.COM>  
Subject: [8706] WTB: Mizuhu 10 mtr CW/SSB HT  
Message-ID: <960520063437\_74602.3317\_EHH36-4@CompuServe.COM>

WANTED TO BUY:

MIZUHU 10 Meter CW/SSB HT

Contact Jim Leininger at Jleininglanet.net -or- 74364.207@compuserve.com

Or you can email me at 74602.3317@compuserve.com and I'll relay the note.

Tnx es 72/73 Dick/KB0SRY..

E-mail from: Richard Schneider, 20-May-1996

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: Jerry <jfelts@rapidcity.com>  
Subject: [8705] RE:A STORY OF MY ST. LOUIS TUNER  
Message-ID: <199605200532.XAA16932@host1.rapidcity.com>

Tnx for the E-mail, espically Steve-N2MNN. Like I figured I did L1 wrong after two tries, so with Steve's help I redid it for the third time. Looks great, even got all 60 turns on it, but you could'nt get another one on if you tried!! Did I mention I hate winding toroids??

Finished T3, piece of cake it was.

Started and finished circuit board, this was easy.

Started sanding the cabinet shells that I messed up. Man this is like work!!! Maybe I'll wait till tomorrow and use some paint stripper that I have at home.

Stay tuned, next report when the paint dries.

Jerry-NR5A

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: "David D. Meacham" <ddm@datatamers.com>  
Subject: [8729] Re: Bicycle mobile amp/ps stuff from the banquet +c  
Message-ID: <Pine.LNX.3.91.960520112742.729A-100000@dt1.datatamers.com>

Nils,



The guy was NU8N, Jim Kortge. His E-mail address is:

jokortge@tir.com

72, Dave, W6EMD

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: adams@chuck.dallas.sgi.com (chuck adams)  
Subject: [8745] Re: Days Inn South - A satisfied user  
Message-ID: <199605202114.VAA29403@chuck.dallas.sgi.com>

I wish to thank the North Georgia QRP Group including  
Jim Stafford W4Q0 and Ken Evans KJ4XR for bringing the  
vertical and "planting it" in the courtyard for our use  
during the big to do in Dayton.

I smiled when Wayne Burdick N6KR on a Sierra was working  
Italy and France at 2W and cranked it down to 1W to see  
if it could be done. I know that he misses the EU stations  
from sunny CA. :-)

Thanks again to the 'antenna committee'. You are hereby  
reelected for a second term by all that attended. :-)

dit dit

--

Chuck Adams (K5FO CP-60) adams@sgi.com  
K5FO TMPS 1996 Qs=016 States=12 Confirmed=05 DX=01  
AZ CA CO IL IN MI OR SD TX UT WI WY

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: adams@chuck.dallas.sgi.com (chuck adams)  
Subject: [8713] Re: Dayton Report de K5FO  
Message-ID: <199605201325.NAA06763@chuck.dallas.sgi.com>

Thanks Dub,

I hope it is OK, I'll post the contents of your note to the group.  
I know of the CFO group. I've always been impressed with the guys  
that have the "puller" on the VFO and make like a chicken at the  
end of the QSO(s).

Your name came up in they eyeball QSO with Stan. Funny how CW ops

know one another. Don't know what is the cause and what is the effect - not many or we just have good memories. Hope it is the latter. :-)

-----from WA5YFY Dub Thornton-----

Hi Chuck: Great post and sounds like you and all participants had a ball. One comment, Stan may also be a member of FOC, but I doubt it. That group is a group of high speed paddle ops that I believe originated in England, but is world wide. Stan was one of the founding members of the CFO group, which they claim was originated as a spoof at the high-brow FOC group. CFO (Chicken Fat Operators) is the group that hangs out around 7.033 and does indeed do some high speed operating at times. They are mostly keyboard ops, but Stan is an exception with is fine paddle fist.

-----  
For those in the qrp-l group:

Dub is a retired telegrapher from the railroad and a high speed CW op. He and I used to talk to each other almost weekly when the Oklahoma QRP group met on Sunday early mornings for a net. But alas, they figured that if they moved down to 80M to avoid the XEs they could at the same time get rid of K5FO. Worked on both counts. :-)

Thanks Dub for the info.

dit dit

--

Chuck Adams (K5FO CP-60) adams@sgi.com  
K5FO Tmps 1996 Qs=016 States=12 Confirmed=05 DX=01  
AZ CA CO IL IN MI OR SD TX UT WI WY

From owner-qrp-l@Lehigh.EDU Mon May 20 22:33:40 1996  
From: KR4GL@aol.com  
Subject: [8733] Re: Fdim & Days Inn South  
Message-ID: <960520152816\_305399813@emout18.mail.aol.com>

I'll agree to that. Sweated more in my room than out in the flea market Saturday.

The hotel couldn't spoil a wonderful Fdim and great hospitality suite action. But, we need to take a look at just what we expect in a facility and if the Days Inn South can meet those expectations.

Thanks everybody for a great time.

72 de KR4GL  
John Foote

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: "Dana H. Myers" <myers@bigboy.West.Sun.COM>  
Subject: [8739] Re: Gain of LNA ?  
Message-ID: <Roam.3.0.832624063.1131.myers@bigboy>

> I am building a LNA for a VHF receiver using Motorolas MRF901 (BJT).  
> Is there any rule of thumb on how much gain an LNA should have. The rest  
> of the receiver is taken care of by a Motorola chip (I don't have the number  
> here but I think it is 13145) with a first mixer conversion gain of about 17  
> db.  
>  
> Svein Vetti

I'm no expert on LNAs, but I'd guess the LNA needs enough gain to set  
the desired noise figure for the receiver. You have to do a system  
gain/NF calculation of the cascaded stages.

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: Mike Czuhajewski <wa8mcq@u1.abs.net>  
Subject: [8747] Re Hall of Fame article  
Message-ID: <Pine.BSI.3.93.960520185845.15131A-100000@u1.abs.net>

Monte: Sigh--as I told someone earlier today, I HAD (note the tense)  
the list of earlier HoF members in there but it got removed during a  
late revision cycle. Here it is, for you to add somewhere: The 1992  
inductees into the QRP Hall of Fame (who are the initial inductees)  
are the Rev. George Dobbs, G3RJV; Doug DeMaw, W1FB; Randy Rand, AA2U,  
and Roy Lewallen, W7EL. At Dayton this year, all except W1FB were  
present and were presented with their long-overdue plaques (real  
walnut, not simulated wood!). George Dobbs accepted the plaque for  
GM3OXX, W1FMR accepted for K1BQT, and the plaque for W7ZOI was  
presented to him in person during a visit to Maryland shortly after  
Dayton. The others will be mailed. The 1996 inductees bring the QRP  
Hall of Fame to 11 members.

-----  
(Note to Monte only--you can edit or rearrange any way you wish for  
publication. As for the presentation to W7ZOI, that's actually about

24 hours in the future, based on current plans to fly into Baltimore tomorrow.)

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: flanders@GroupZ.net (Jerry Flanders)  
Subject: [8735] Re: Homebrew Vertical Matching Circuit  
Message-ID: <199605201939.PAA101120@nss2.CC.Lehigh.EDU>

About a week ago, I wrote:

>>...An excellent homebrew vertical antenna for use with radials is a simple  
>>conductor about 43 feet long. That length (when the reactances are tuned out  
>>at the base of it) gives you a radiation resistance of about 50 ohms on 7  
>>MHz, gives you approximately a 5/8 wave (with resulting gain at low angles,  
>>and also about 50 ohms radiation resistance) on 14 MHz, and (if I remember  
>>the numbers correctly - it has been years since I actually designed this  
>>thing) a radiation resistance of about 12 ohms on 3.5 mhz (making it a bit  
>>easier to match there with a standard 4:1 transformer). When I was using  
>>this we didn't have 30 meters, and I couldn't operate 160, so I didn't try  
>>to match the antenna on those bands. I did not provide for remote switching  
>>from the shack at the base, so I had a long walk to change bands (by a  
>>rotary switch at the base). The matching network is very simple - just a  
>>capacitor on 40, just an inductor on 80, and a different inductor on 20. I  
>>used a 1/4 wave line of 26 ohm coax for the 4:1 transformer on 80. It was a  
>>VERY effective omnidirectional antenna. If anyone wants to actually build  
>>this, email me and I will try to be more specific about values (I still have  
>>the old matching network on a shelf in the garage)....

>>=====

Well, I am embarrassed - I got several requests for specifics on the matching network, and I don't have all the data on it that I thought I would have! I found the old piece of the matching network in the garage, and discovered that I had removed the variable cap long ago. I think it was about 120 PF.

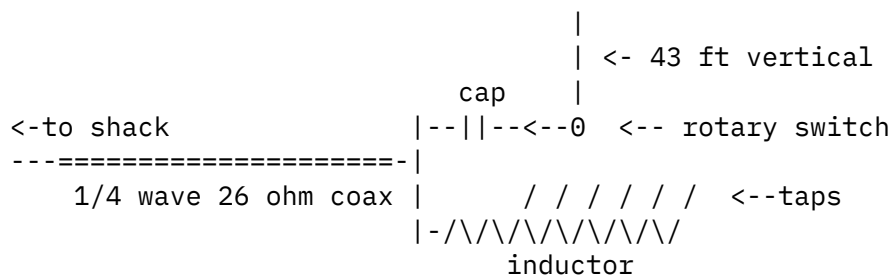
Anyway, to make the 43 ft vertical resonant on 20 and 80 meters, only an inductor is required. (More on that inductor later). On 40 meters, only a capacitor is required. The radiation resistance is approximately 50 ohms on 20 and 40, and about 12 ohms on 80.

I accomplished the 4:1 impedance transformation on 80 meters with a quarter-wave section of 26 ohm coax (two 52 ohm coaxes in parallel). One neat feature of such a transformer is that it is frequency-dependent. On frequencies where it is an odd multiple of a quarter wavelength (80M), it does the 4:1 transformation. Where it is an even multiple (40M, 20M), it is

simple 1:1. So the 26 ohm section can be left in the line all the time in an 80/40/20 antenna. I simply used it as the feedline to the base of the antenna.

A single pole 7 position rotary switch at the vertical's base selected either the 120 PF variable capacitor (previously optimized and "locked" for 40 meter match), or one of 6 taps on the inductor. Those taps provided matching on 20 as well as several spots on 80. The inductor was made of some surplus coax, about the size of RG-8X. The form is 2.5 inches dia, and I have 20 turns close-wound which cover a length of 5.5 inches. The 6 taps are at the last 6 turns.

Summary: 80 M quarter-wave 26 ohm coax connects to one end of coil and one side of var capacitor. The switch rotor connects to the vertical radiator, one of it's poles to the free end of the var cap, the other 6 to the taps on the inductor.



I included all the details I can remember, but wouldn't really recommend this exact matching method now. The quarter-wave transformer would probably present a problem on 30 meters today.

If I were doing this today, I would probably just put an antenna tuner in a box at the base, and feed the tuner with 50 ohm coax. Maybe even the little \$150 automatic tuner kit from the QST article of a few months ago.

I think the main point of this antenna is that on 20 meters, it was  $5/8$  wavelength long, which improves low-angle radiation. There is some minor improvement on 40 meter low-angle radiation as well. Coupled with a good radial system, it was VERY effective.

I apologize for CC'ing this to the reflector, but my IN mail box got corrupted here and I lost two of the addresses of guys who wanted the details.

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: ddonald@vikings.onecomm.com (Dave Donaldson)  
Subject: [8743] Re: RADIO SHACK DSP

Also see if your area has a store which sells the "close out" and referbished units. We have one hidden in a suburb. I picked up a referbished DSP for \$25 with out ps.

Dave  
WB7DRU  
St. Paul MN

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: "Lau, Zack, KH6CP" <zlau@arrl.org>  
Subject: [8728] RE:Receivers  
Message-ID: <m0uLZhZ-000RD8C@mgate.arrl.org>

I've had good luck with high level diode mixers when building QRP rigs--I use a pair of TAK-1Hs in my 6 meter radio to get a 100 dB two-tone dynamic range. I consider the direct conversion/LC filtering to be a distinct advantage--I don't have to worry about crystals shattering when a nearby station fires up with a couple hundred watts--or some mobile drives up next to my QRP portable station. Of course, the RF LC filters are bigger than some QRP rigs.

An interesting approach is to use low noise/loss circuitry. 1 dB of RF filter loss, 5 dB of mixer loss (cleverly reflect the image properly), 1 dB crystal filter loss, and a 1 dB NF high gain post amp ought to yield a high dynamic range 8 dB NF receiver. Helps to have lots of test equipment...

Zack KH6CP/1

BTW--Did you know that the West Coast VHF conference, Deerfield, and Dayton now fall on consecutive weekends?

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: "Dana H. Myers" <myers@bigboy.West.Sun.COM>  
Subject: [8731] RE:Receivers  
Message-ID: <Roam.3.0.832617798.20701.myers@bigboy>

>  
> I've had good luck with high level diode mixers when  
> building QRP rigs--I use a pair of TAK-1Hs in my  
> 6 meter radio to get a 100 dB two-tone dynamic range. I  
> consider the direct conversion/LC filtering to be a distinct  
> advantage--I don't have to worry about crystals shattering  
> when a nearby station fires up with a couple hundred  
> watts--or some mobile drives up next to my QRP portable  
> station. Of course, the RF LC filters are bigger than some  
> QRP rigs.

Perhaps you could protect a crystal filter using a variable attenuator before the mixer, though this may run the risk of compromising the huge dynamic range, and you'd have to build an AGC detector/amplifier to drive it.

> An interesting approach is to use low noise/loss circuitry.  
> 1 dB of RF filter loss, 5 dB of mixer loss (cleverly reflect the image  
> properly), 1 dB crystal filter loss, and a 1 dB NF high gain  
> post amp ought to yield a high dynamic range 8 dB NF  
> receiver. Helps to have lots of test equipment...

Just how strong can you get a 1dB NF amplifier? If it was strong enough with 6-9dB of gain and a decent front end filter is used, wouldn't the mixer loss and crystal filter loss become much less important? Perhaps a power GaAsFET (with AGC feedback ;-)  
would do the trick at HF/VHF?

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: "Lau, Zack, KH6CP" <zlau@arrl.org>  
Subject: [8752] RE:Receivers  
Message-ID: <m0uLflj-000RBJC@mgate.arrl.org>

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>From: Dana H. Myers

>Just how strong can you get a 1dB NF amplifier? If it was strong  
>enough with 6-9dB of gain and a decent front end filter is used,  
>wouldn't the mixer loss and crystal filter loss become much  
>less important? Perhaps a power GaAsFET (with AGC feedback ;-)  
>would do the trick at HF/VHF?

The problem is that the usual weak link in a high dynamic range system is either the mixer or crystal filter. I'm just taking the reduction in gain ahead of them to its logical conclusion--no active stages ahead of either and minimal loss to preserve the noise figure. All the power GaAs FET circuits I've seen have excessive gain at VHF.--Zack KH6CP/1

From owner-qrp-l@Lehigh.EDU Mon May 20 22:33:40 1996  
From: bob.roach@sourcebbs.com (BOB ROACH)  
Subject: [8703] RE:Shareware for circuit r  
Message-ID: <8C0E580.0001038A45.uuout@sourcebbs.com>

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GE>-Does anyone know of a good shareware program suitable for designing  
GE>-circuit board layouts? Thanks...  
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In the January 1996 issue of "Nuts and Volts" magazine there is an article on low cost (under \$100) shareware programs for circuit board layouts. Here is a little bit of the the info on the less expensive offerings.

Parts-bin	Draws schematics	Freeware	AOL software forum
AutoSkem	Draws schematics	Shareware\$29	PARTBIN.PCX AOL software forum
Easytrax	PCB Layout	Freeware	AUTOSK14.ZIP Protel BBS 408-243-0125
Schematic Plus	Schematic Capture	Shareware\$45	WWW site <a href="http://users.aol.com/spoulsen/index.htm">http:// users.aol.com/ spoulsen/index/ htm</a>

I have the Easytrax freeware version and it is a little short on documentation but the price was right. I suspect for some, it may not be worth the trouble to figure it out, but again, what do you expect for nothing. The program will do multi layer boards and will make a silk screen template for component locations. Some things are disabled in the freeware version.

73 de KE4QOK  
Bob

\* SLMR 2.1a \* All Scottish food is based on a dare.



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This message originated from: ----- Selective Source BBS  
----- Virginia Beach, Virginia  
----- (804) 471 6776

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: svein@eci1.ucsb.edu (Svein Vetti)  
Subject: [8725] RE:Shareware for circuit r  
Message-ID: <9605201733.AA25676@petunia.ucsb.edu>

The best free PCB program I have used is called WINBOARD and is made by IVEX.  
You can download it from <http://www.ivex.com/>

It is a Windows based with lots of on line help. You need a 486 / 8 megs min.

-Svein

From owner-qrp-1@Lehigh.EDU Mon May 20 22:33:40 1996  
From: John D Young <jdy@whitney.ufl.edu>  
Subject: [8719] RE shareware PCB design  
Message-ID: <Pine.LNX.3.91.960520102528.895A-100000@whitney.ufl.edu>

Gary

You might want to check out WinBoard and WinDraft from IVEX.  
<http://www.ivex.com>

These are full professional schematic drafting and PCB layout programs.  
You can download a full feature copy of both that is limited to 100  
pins. Manuals can also be downloaded but make sure you have a good  
supply of paper - they are almost 500 pages. You can register another  
100 pins for \$50 and get all the updates from the web/ftp site.

NTE is selling both programs at \$30 each with license for 200 pins but no  
printed manuals. I just download and printed them.

The 200 pin limit should cover most of the QRP work. It also could allow  
us to send schematics and board layouts, that can be edited via the net.

I don't work for IVEX - I just like the way they dok business.

73 John  
WA8KNE